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The Journal OF THE South Carolina Medical Association

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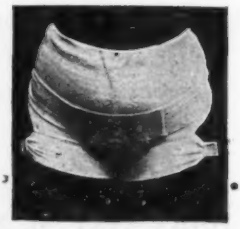

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ORIGINAL ARTICLES.

THE OCCIDENTAL-ORIENTAL HEALTH PROBLEM.

BY LELAND COFER, M. D.,

Passed Assisant Surgeon, U. S. Public Health and Marine Hospital Service.

..It was my intention to discuss the subject of quarantine and disinfection in a general way, but at the request of your president, Dr. Baker, I will take up for your consideration the public health problems which will confront the Atlantic Seaboard in general and the post in Charleston, South Carolina, in particular, upon the completion of the Panama Canal. For lack of a better name we will call it the Occidental-Oriental Public Health Problem. We will discuss it under the following heads.

1st. The geography of the problem
2nd. The diseases in the problem.
3rd. The carriers of the diseases.
4th. The solution of the problem.

Read before the S. C. Medical Association, Summerville, S. C., April 1909.

THE GOGRAPHY OF THE PROBLEM.

A map of Eastern Asia and Western America will show the Pacific Ocean to be bounded by Siberia and Alaska on the North, New Zealand to the South, North and South America to the East, and Asia and Australia to the West. The Pacific Ocean with its continental and insular boundaries constitutes a mighty commercial and disease scattering arena, an arena which may be likened to a huge cart wheel, of which the Hawaiian Islands is the hub, from which lines of travel radiate as spokes to a tire formed by the folowing ports, namely; Victoria,

Vancouver, Port Townsend, Portland, San Francisco, Port Los Angeles, San Diego, Mazattan, Acapuleo, Salina Cruz Panama, Guayaquil, Callao, Iguigue, Autofagorta, Valparaiso, Wellington, Auckland, Sydney, Brisbane, Singapore, Manila, Hong Kong, Shanghai, Nagasaki, Kobe and Yokohoma. Commercially speaking the ports mentioned are either centers of export or import or else aret simply ports of call. Hygienically speaking they are or may become at any time either disease centers of export or import or both. They are important from a quarantine standpoint both on account of the steady increase of intercourse between these ports and on account of the fact that for their respective countries they are points of centralization and distribution.

As infected places their relative importance is subject to wide variation, but infectible areas they are equally important from a general quarantine standpoint.

THE DISEASES IN THE PROBLEM.

The diseases to be considered in this problem may be divided into two classes, the quarantinable and the unquarantinable.

The quarantinable diseases are yellow fever, plague, smallpox, cholera, typhus fever and leprosy. The unquarantinable diseases are scarlet fever, diphtheria, amaebic and bacilla dysentery, beri beri, trachoma and nchylostomiasis.

Yellow fever has been prevalent in the ports of Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Columbia, Ecuador and Peru. Plague has occurred in the ports of Australia, New Zealand, Philippine Islands, China Japan, Formosa, Hawaii, Panama, Peru and Chile. Typhus fever, although occurring from time to time in Isthmian, South American, Chinese, Philippine Island and Japanese ports is seldom seen in maritime quarantine work. It should however, be always borne in mind when vessels from the above named ports are being inspected.

Leprosy abounds in Chinese, Japanese, Philippine Islands, South American, and Hawaiian ports, and is rather frequently encountered in quarantine work. The scientific investigation of leprosy is soon to begin under the auspices of the United States Public Health and Marine Hospital Service, when this disease will be studied in all of its phases and from every standpoint, so that the findings are likely to be of as much interest to quarantine officers and sanitaries as to the students of medical service in general.

THE CARRIERS OF THE DISEASES.

The modern large steam vessels are rapidly replacing those of the old type on the transoceanic routes, and there is no doubt that as disease carriers they are far safer than the old type of vessels. The large steamers are so expensive to maintain that their runs are quicker and their time in port much shortened, all of which has a bearing upon the chances of their becoming infected with the intermediate boats of certain quarantinable diseases. Below the water line the hulls of such vessels are divided into water tight bulkheads which together with loftiness of the hull, afford some protection to the ingress of vermin.

The old type steam vessel although carrying out our traditional ideas of what is nautical, is seldom large, and is devoid of arrangement tending to a wide and distinct separation of classes and departments. The superstructure on such a type of vessel affords direct communication with any or all parts of the ship. The quarters on such vessels are constructed with reference to the conservation of freight space, and the separation of classes on board is from a quarantine point of view purely imaginary.

The modern steam vessel on the other hand is almost without exception large, with a general arrangement tending to the wide and distinct separation by bulkheads and decks of the 3 classes of passengers on the one hand and of the different departments of the ships personel on the other. Such vesssels have high superstructures amidships in which the first cabin passengers live in a world apart from every one else on board. The second cabin passengers are usually quartered in the same superstructure.

Naval vessels and military transports while they do at times become infected with and are therefore capable of carry-

ing quarantinable disease, are comparatively safe for the reason that commercalism enters nowise into their conduct, and every officer on board is officially and morally the guardian of the sanitary integrity of such a vessel.

Steel sailing vessels and tramp steamers usually make long voyages, visit many countries, have the carrying of freight as their sole aim, and in short present the greatest risk to the quarantine officer of any of the varieties of ocean carrier.

All signs point to the gradual substitution of steamers for sailing vessels all over the world and is predicted that this substitution will proceed more rapidly in the future than it has in the past. This fact has an important bearing upon the problem now under discussion for the reason that steamers, particurlarly tramp steamers are more easily and more often infected than sailing vessels, and their treatment after infections prevents far greater difficulies.

Between the Philippine Islands and North American ports military transports predominate. After the completion of the canal it is probable that troops en route from the Phillipines, when destined to points on the Atlantic Seaboard, will be brought through the canal. From this class of vessels however there will be no risk for the reason that not only are military transports detained in quarantine at Manila prior to their departure, when there is quarantinable disease present in that port, but the medical officers of the U. S. army attached to the transports are very careful to observe every precaution against infection. The South American ports do the greater part of their exporting in steel sailing vessels. The South, I mean the South Atlantic States, will buy nitrate of soda from Chilli and with their great stores of phosphate rock, sell a manufactured fertilizer to such countries as Japan, which latter country by the way, has only begun her industrial career. This trade will form one of the connections, through the Panama Canal, between the yellow fever and malaria zones of the southern part of the United States and the plague ports of South America, Australasia and the Orient. Again the gulf ports will export cotton, cotton goods, lumber and manufactured iron and steel in exchange for the tea, silk, mattings curios and other manufactured articles of the Orient. The result of this intercourse may be the exchange of malaria and yellow fever on the part of the Gulf ports for the plague, cholera and leprosy.

This in short is the Occidental-Oriental problem as it applies to the South Atlantic Seaboard and Charleston. Now for the solution of the problem. It can only be solved here on this coast by adopting the same methods now in vogue on the Pacific coast. The remedies are quarantine and municipal sanitation. So far as the quarantine end of it is concerned, the probem has been studied in all of its phases by Surgeon General Wyman with the result that a quarantine system has been put into effective operation whicch anticipates amost every possible exigency. This system comprises a comr plete system of reports from all ports whether infected or not, the representation of our Surgeon General in all disease ports of any importance by medical officers of experience who see that the quarantine Act of 1893 is carried out in the case of vessels bound to United States ports, and a system of original and supplemental health bills which show the health status of both the ship and the ports visited by her. In order that these ships may avoid routine detention at our home quarantine ports, the personel and the ship itself must comply with various restrictions in the port of departure depen ling upon circumstances. For instance vessels are frequently disinfected in foreign ports against infection from rats or mosquitoes. Passengers are detained under observation the period of incubation of a disease and when necessary personal effects are disinfected and labeled at the port of departure. The next step in the system is delay on "clearing house" inspection and treatment at such midway points as Hon. olulu at the present time and after the canal is completed, Honolulu, Puget Sound ports and the Panama canal ports. Finally the inspection at quarantine at the port of arrival will constitute a four layer "sieving" process. Gentlemen I do not see how it is possible for any thing more to be expected of quarantine

in the solution of the problem. I repeat the Public Health and Marine Hospital Service is thoroughly conversant with and is exercising an efficient control over the functions of the present Occidental-Oriental trade routes where they effect the health status of our country.

Now for the other faction in the solution of the problem, internal sanitation.

There is an old medical saying to the effect that the way not to have any deaths in medical practice is not to have much practice. The same idea will apply to a seaport town. The way to quarantine its freedom from filth and disease is not to have many vessels entering it. When the Panama Canal is opened you are going to have the vessels from all parts of the world entering your ports. This will mean an increasing floating population composed of the foreign sailor elements and the representatives of various nations who will cater to their peculiar wants. If the port or ports grow considerably this water front colony, taken as a whole will be a large one. In this climate it requires only one infected plague rat or only one infected mosquito to start a plague of yellow fever in a port. Now quarantine may keep out a multitude of infected rats and mosquitoes, to say nothing of infected persons and things over a long period of time, but to expect it to be perfect and keep the last rat or mosquito out all of the time is to expect it to do the impossible so long as it (quarantine) exercises its functions as a sieve for disease, not a dam for commerce. To provide against the last rat or the last mosquito, the other wing of the public health battery must be brought into play, you must clean up your ports and keep them clean. You must develop internal sanitation. When the Panama Canal is opened you must vaccinate your seaports, so to speak. The cities of any maritime importance on the Pacific Coast have been hard at work at this process of municipal sanitary vaccination, San Francisco, Seattle, Portland, Tacoma, Los Angeles, Honolulu and Guayaquil are steadily improving their invulnerability to such a disease as plague.

These cities have found out that it pays to be as disease proof as possible, for the reason that quarantine operations are directed against the commercial intercourse existing between places more than against the places themselves and they have found that it is obsolete to cause quarantine functions to be made burdensome to traffic. For example, suppose that any one of you were charged with the task of keeping Charleston clear of small pox, but with the understanding however that none of the inhabitants of the city were to be vaccinated. Compare the quarantine restrictions necessary to such a result with those necessary should the inhabitants of the town enter into the spirit of vaccination as a popular health measure. In a town well vaccinated, so to speak, it would not be a calamity if a case of small pox did get in. The case would soon be isolated and that would be the last of it. So it is in a rat proof town. I mean a town where the citizens have built up a sentiment for building against rats, for protecting their sewers against them, and for obliterating the spaces usually occupied by them. Should a stray infected rat by chance gain entrance to such a town, it would not be long before he would be either caught or killed, while in the case of the ordinary town where no anti-rat work has been done, a stray rat would almost immediatey find an asylum. Now gentlemen, you come into direct contact with the people. A person will listen to his family physician when he will ignore everyone else. Explain when you have the chance that public health is human life, that municipal sanitation and quarantine are agencies to be used together to save human life. Explain that one is developed at the expense of the other, that quarantine goes upon the public health scales just in proportion as municipal sanitary weights are applied in larger or smaller degree. In short more municipal sanitation, less quarantine and vice versa. Surgeon General Wyman, my chief, never fails to bring out the point that he is trying to dovetail quarantine with internal sanitation. What he wants to do is to prevent disease, and he believes that it is done more easily for every one concerned when the quarantine officer and the health officer "pool" their interests, so to

speak.

Dr. Baker desires me to make some mention of the quarantinable diseases to which we will be liable when the canal is opened.

I believe that quarantine will give absolute protection to this country from every quarantinable disease save leprosy and plague and it will give nearly absolute protection from these two diseases. In the case of leprosy the disease may exist, even be fairly well advanced and yet not be apparent for any inspection possible in quarantine work. Of course, if suspicion be directed to a certain person, a careful physical examination would be made and if necessary, the microscope would be brought into play. The ordinary symptom for commencing leprosy, the claw hand, the node on the ulnar nerve, the thickening between the eyes, the elongated lobes of the ear, the presence of tubercles, the presence of macular markings, the loss of eyebrows and the drumstick fingers will be looked for by the quarantine officer, but those cases wherein the infected is limited to the nasal mucus, you gentlemen must discover by examining the nasal secretions of private patients.

In the case of plague, the disease being carried by the rat flea, it is impossible to be certain that infection will not escape detection by quarantine measures. For instance it is observed that the virulence of infection is subject to wide variations, not only in rats, but in man. Plague may exist in rats in an attenuated form for a certain period before it makes itself manifest by a marked mortality. Then again, it is difficult after all the rats have been killed in an infected vessel, to be sure that all of the fleas have been destroyed. The killing of every rat in a vessel is a very difficult matter and when it is remembered that the rat flea leaves the rat as soon as the body begins to get cool after death, and seeks the nearest warm body, it is impossible for the quarantine officer to know where he stands with the disease. In a country liable to infection with plague, every phenomena should be carefully watched and if possible, the sputum examined for plague bacilli. Plague pneumonia is very virulent, very rapid in its lung involvment, attended by very high temperature and delirum, with great prostration and rapidly fatal termination. I have not the time to discuss this form of the disease at length, but such a type of pneumonia in a place exposed to plague infections is to be regarded with suspicion. However, the key note to the situation is the status of the rats. If it can be determined that the rats in a community are or are not infected with plague, the health authorities are in a position to fight against the infection of human beings, for plague always exists as an epizootic in rats before it attacks human beings.

It is obvious in this age every city should take cognizance of its rat popuation, in other words, rat extermination is destined to become as fixed a function as garbage disposal. My time is up and I must close but not before I thank you for bearing with me through this lengthy discussion. I consider it a great honor to represent my service at this meeting, and I have derived much pleasure in meeting the members of the South Carolina State Medical Association for which I am grateful to Surgeon General Wyman.

DISCUSSION

Dr. T. P. Whaley—I would like to ask Dr. Cofer if he has drawn any conclusions as to the contagiousness of leprosy (same question asked Dr. Haines)

Dr. Maudin.—I would like to ask if the government insists on quarantine or isolation for lepers?

Dr. Cofer,—I believe the authorities agree that it is contagious for the most part as the result of intimate contact. If the nasal secretions are infected as often as is commonly supposed the acts of sneezing and coughing and the use of handkerchiefs and towels would serve to disseminate the virus.

The United States quarantine regulations direct that cases of leprosy found on vessels shall be removed and placed in quarantine.

AETIOLOGY, Prevention and Treatment of the More Common Tropical Diseases Met With on the Canal Zone.

BY J. ADAMS HAYNIE, M. D., U. S. A.

Mr. President and Gentlemen of the S. C. Medical Association

It is certainly a great privilege to me to be with you today, and to be greeted by the kindly hand clasps of so many friends after a sojourn in a far country. One doesn't realize what a great blessing it is to be an American and especially a citizen of South Carolina until one has lived among the black and tan races of other lands.

Eighteen years ago I had the honor of being in Summerville at a banquet given at the Pine Forest Inn to the Southern Surgical and Gynecological Society, Prof. Sheppard gave a delightful tea to the members. I remember there were two large punch bowls, one containing tea grown here by Prof. Sheppard and the other champagne punch. I am told the tea was delicious. Prof. Sheppard showed us the tea plants growing and in between the tea rows were planted most lovely roses. Since that time Summerville has always brought to my mind thoughts of spring time, sunshine, champagne and roses and I am indeed glad to be here once again to enjoy that quartette.

When Col. Gorgas detailed me to represent himself at this meeting and to read an address I told him his shoes were too great for me to fill, but glancing at my feet he would not agree to that proposition, so I am compelled to inflict upon you an article with the following title: "Aetiology, Prevention and Treatment of the more Common Tropical Diseases met with on the Canal Zone."

When one hears of the Isthmus one expect to hear about yellow fever. But my chapter on that disease will be like that in the history of Ireland entitled "Snakes in Ireland." The whole of the chapter being this statement. "There are no snakes in Ireland." There is no yellow fever on the Isthmus and has been none since Dec. 1905. Col Gorgas, Major Carter and their co-workers took possession of the Canal Zone in May, 1904 and they so efficiently did their work that yellow fever remains only as bogy man to scare tourists with when they become too numerous on the Isthmus.

The Stegomyia Calopuh was thoroughly destroyed by fumigation and the destruction of their breeding places. Three times a force of four hundred men fumigated every house and hovel in Panama and refumigated every block where yellow fever occurred. The brigades systematically destroyed all breeding places or screened them. They used two hundred thousand pounds of pyrethrum, and four hundred thousand pounds of sulphur, and by December 1905 had the Stegomyia so well in hand that since that time there are but few in the city of Panama. At the present time an effective quarantine is maintained and tho' yellow fever is in Guayaquil and also in Central America yet it has not recurred and Panama is as healthy as most American cities. This great discovery of the cause of yellow fever was worked out by the Army Medical Board consisting of Drs. Reed, Carrol, Lazear, and Agramonte in 1901.

It is proper to mention in this connection that Dr Coles Finley since 1881 had deduced the theory of the production of yellow fever with the bites of infected Stegomyia. The discovery of the preventon of yellow fever came in the nick of time, for without this knowledge and its sister discovery of transmission of

Read before the S. C. Medical Association, Summeerville, S. C. April 1909.

malaria by the Anopholes mosquito work on the Canal would be an impossibility.

This brings us them to the consideration of malaria, its etiology, how treated and how prevented. When we consider the geographical situation of the Isthmus, its tremendous rainfall from May to January, the marvelous tangle of rapidly growing plants, its streams pushing their way through flat sodden swamps, every depression teeming with the larvae of the Anopheles, we wonder how the mind of man could have dreamed of ridding of mosquitoes this area fifty miles long, and ten miles broad of tropical jungle, recollecting that an Italian, Fiacalbi, has estimated that from one female mosquito two hundred million are produced in four months. This gigantic task could not have been even thought of except some peculiar facts in regard to the Anopheles which are, first; that it prefers clean water, where there is algae and grass; second that it does not travel far from its breeding place except in rare instances, not going over two hundred or three hundred yards; third that it does not bite in the daytime.

The first of these facts made the placing of drains and the keeping them clear of vegetation efficient in destroying the mosquito.

The second, because it was only necessary to destroy their breeding places, and the limited area made this possible of accomplishment, and the third fact allowed the men who had the destroying to do some immunity from infection, while working in the daytime.

The general plan pursued for finding the settlements of Anopholes was clearing away the brush and thick undergrowth, cutting ditches and putting in subsoil drains and where drainage was impossible, kerosene or Phinotus oil was placed on the pools and wherever water was. In the slowly running streams a barrel or a can of oil with a hole in the bottom was allowed to slowly drip into the stream and thus effectually destroy the larvae. The quarters were all screened with copper wire netting whose meshes were small enough to prevent the mosquito from passing through, this prevented those having the malarial parasite in their blood from infecting mosquitoes. A prophylactic dose of 3 to 5 grains of quinine was given daily to reduce the number of patients having the malarial parasites in their peripheral circulation, this also aided in keeping down the number of infected mosquitoes

These methods succeeded, and year by year we see malaria on the decrease and can predict that it will finally be a negligible factor in considering the odds against the Canal project.

In the military hospital in Constantine in Algeirs a medallion has just been placed in commemoration of the work done by Laveran in that hospital, where his researches discovered the malarial parasite and who announced the same in 1880. To Ross however, is due the honor of the discovery of the Anopholes Maculipenis as the host of the malarial Haemamoeba and his theories were amply proved by Manson, Sambon and Low in the Roman campagna.

It has been said that many instances of civilization met their end through inability to cope with malaria, and it has been reserved for the first years in the twentieth century to find out its true cause and to institute such effective remedies for its prevention as exemplified on the Canal Zone, once said to be the unhealthiest spot in the world.

Cicero has said that there is nothing in which men so approach the gods as in giving health to other men, and all honor is due to the pioneer physicians who risked their lives on the Isthmus.

The treatment of malaria on the Isthmus consists of the administration of quinine as soon as a blood specimen is obtained and the malarial parasite found. We either examine the fresh blood or a stained specimen if the case is at all urgent. Quinine is given hypodermatically, 20 grains every 3 hours.

The so called Chagres fever has proved to be only a pernicious malaria and rapidly heals to strenuous treatment of quinine. It might be interesting to note that during the month of August 1908 65 pounds of quinine, powdered, fifty pounds in 3 grain tablets, 40 pounds in 5 grain tablets, five pounds in three grain pills, and two pounds in two grain pills, making a total of 172 pounds of

quinine dispensed during the month.

The next tropical disease of interest and whose far reaching influence is perhaps as great as malaria is Ankylestomiasias or Uncinariasis.

The necessity for routine examintion of the stools of all patients is one of the first things impressed upon the student of tropical medicine, for by such routine examinations can he alone discover the many intestinal parasites to be found in tropical and sub tropical countries. The technique is so easy that one wonders why it is not one more generally used by all physicians. For the benefit of some who may care to pursue this interesting study, I will say that it is only necessary to put a small portion stool on a slide, if too solid add a drop of water, place a cover glass over this, and let it spread out thin between it and the slide and one is ready for work. The ova usually found, and the one we are interested in are the Ascanis Lumbricoides, Uncinaria and Tricocephalus dispar. Occasioanally we find Strongyloides and the Bilharzia haematoba. There ova are easily differentiated, the Ascaris being somewhat barrel shape with a warty shell and showing up yellow bile stained the Uncinaria clear, smooth coated, no bile stain. The Tricocephalus dispar is very distinct doubly outlined, with a little projection at each end and can be mistaken for nothing else. It is admitted by all that the most frequent cause of tropical Anaemia is the Uncinaria and the discovery of the ova in the stools clears up many an obscure diagnosis.

Administer thymol in the following manner: Permit the patient to take no food for 12 hours, give 5 grains of calomel at bedtime, at 7 a. m. administor 20 grains of thymol in capsule, at 7.30 20 grains more, and 8.30 a large dose of Epsom salts. Allow the patient no alcoholic drinks during treatment. After treatment a tonic of iron and arsenic, and make several subsequent examinations of the stool, and if more ova are found administer a second similar treatment, and you will usually have a rejuvenated and grateful patient.

Whether the extreme Anaemia from Uncinaria is due to repeated abstraction of small quantities of blood from the intestine by the hook worm or by a toxine produced by the presence of the worm is the mooted question, but authorities seem to be in favor of the latter hypothesis.

As this disease is common in South Carolina this simple and inexpensive treatment should have a wide area of use fulness in the Southern States and I know much is being done in the treatment of this disease.

As to prevention unpoluted water and the wearing of shoes so as to prevent ground itch, the usual mode of ingress, can do much to prevent, while the general administration of thymol will lessen the number of the paraste carriers.

DYSENTERY.

This is a water borne disease and is also contracted by the eating of uncooked vegetables, such as lettuce, fruits that have lain on the ground and are not peeled, and by the drinking of water that has been contaminated. We recognize three forms on the Isthmus, the Amoebi, the Bacilary and the Catarrhal.

The first is due to the Amoeba Coli. This little protoplasmic mass may be seen in the stool and its diagnostic movements observed by having the miscroscopic stage warmed. The Amoeba is a clear mass of faintly green color about four times the diameter of a red corpuscle which by sending out pseudodia creeps around on the field on the microscope. It is easily recognized and the treatment by the use of rectal injections of quinine solution rest in bed, bismuth by the mouth in large doses, a bland nutritive diet, sometimes laudanum and starch water is necessary to control the tenesmus.

The Bacilliary form is probably due to the Bacillus Dysenteriae, as when the serum of patients suffering from this disease is added to a culture of that bacteria the characteristic clumping is seen.

The treatment is rest in bed, large doses of bismuth, bland diet.

Much success has been obtained by the use of injections of anti-dysenteric serum. This last variety sometimes so overwhelming a toxaemia as to produce

death in less than twenty four hours. This is known as fulminating dysentery and its malignancy proves its bacilliary origin.

The third or Catarrhal form is the usual form in the United States and is due to taking cold or the ingestion of some substance having an irritating effect upon the mucosa of the colon. It yields readily to castor oil as a purge, followed by bismouth and opium, or if the tenesmus is great, starch water and tincture of opium by the rectum.

To sum up, if you want to avoid dysentery in the tropics boil the water you drink, peel the fruit you eat, eat only cooked vegetables, eat nothing that has been handled by the natives, unless it is subjected to a high temperature, sufficient to kill the Amoebia or the dysentery bacillus, wear a flannel bandage and avoid the social bowl.

Abscess of the Liver.

One cannot leave the discussion of dysentery without taking up the subject of abscess of the liver, for it is proved that rarely if ever does this condition occur without a previous dysentery and the fact that the contents of the liver abscess are not usually true pus, but in nearly all cases found to contain Amoebia, points to the Amoebic form of dysentery as its true cause. No disease that we meet with in the tropics requires more diagnostics acumen than that of liver abscess for its onset is insidious and its symptoms resemble malaria, pleurisy, basic pneumonia, typhoid fever and other diseases and one has to be ever on guard lest a mistaken diagnosis be made, the patients condition not understood and a postmortem show a grievous error of the physician. The symptoms of liver abscess consist of an uneasy feeling in the right hypocondrium, or perhaps a stabbing pain, a dull boring pain in the region of the right scapula, perhaps like jaundice, though this last is by no means a constant symptom. On physical examination if the abscess has progressed far enough a dome shape enlargement of the liver may be made out. The area of dullness is increased, the right rectus muscle on examination, is rigid and starts out as if to protect the areas examined. The irregular outline of the liver can sometimes be made out and sometimes the seat of the abscess located by palpitation. As the disease progresses they have septic fever of an irregular type with slight chills and irregular fevers at different hours of the day, drenching night sweats, slight jaundice, great jaundice, great emaciation, muddy skin, pasty stools.

Repeated examinations of blood show no malarial parasites, widal tests is negative, stool examinations negative, sputem shows no tubercle baccili. These conditions exist for weeks, perhaps months and if left to itself the abscess ruptures into the intestine through the duodenum, on into the bronchi through the diaphragm or perhaps into the general peritonel cavity. In all cases presenting such a train of symptoms aspiration under either anaetheschia is justifiable and the aspirating needle should be passed through various portions of the liver until pus is located. Having located the pus, leave the aspirating needle as guide and make an incision down to the peritoneum. If there are adhesions between capsule of liver and peritoneum the incision may be carried down to the abscess or a pair of dressing forceps pushed in to the abscess cavity, closed and withdrawn opened; or the finger may be used to explore the cavity breaking up all pockets that may exist. A flange rubber tube is carried to the bottom of the abscess which is allowed to drain itself, Should there be no firm adhesion the capsule may be stiched to the abdominal wall with a double row of stitches. Some prefer to stuff the wound with gause and wait for adhesions to form before opening the abscess. If the pus is struck above the costa border it is often necessary to remove a portion of a rib in order to gain access to the abscess. We have many cases of liver abscess on the Isthmus and our surgeons have been remarkably successful in curing this most serious of tropical ailments.

Dhobie Itch.

This disease we all have sometime or other during our stay on the Isthmus. It is a name we have given to every form

of itching skin diseases that flesh is heir to and their name is Legion. We have pemphigus contagiosa, tinea imbricata, tinea tonserans, and tinea versicolor, scabies, bites from red bugs, chigoes, and seed ticks. We are so accustomed to scratching that we do it on all occasions and the dweller in the tropics gets a perfect luxury in scratching. The Chinese sell in their stores, a delightful instrument which I have with me. It is shaped as you see like a human hand and easily reaches the most inaccessible portions of the human anateomy. True dhobie itch, Manson says, is due to the microsporen minutissimum I take his word for it. Ihave never seen the sporon, but I have felt its power.

The prevention is a daily bath with plentiful applications of equal parts of boric acid, starch and oxide of zinc to the axillae and crutch. Daily change of underwear, clothing should be boiled in the washing, which is not the native method. They dislocate the clothes and remove the buttons by a beating on the rocks in the beautiful thick water of the Chagres and Rio Grande rivers.

The treatment I have found most effective in the dhobie itch is the painting of the affected parts with a 25 per cent solution of salicyic acid and alcohol. This treatment destroys the cause and the patient returns with blood in his eye looking for the doctor who prescibed.

LEPROSY.

Leprosy is met with on the Isthmus and we have at Palo-secca colony of 23, where are isolated all cases found in Colon, Panama, or the Canal Zone. They have excellent quarters and a white superintendent looks after their comfort and administers such treatment as they require.

The treatment is similar to tuberculosis, force feeding, hygienic surrounding etc.

Cholmoogra oil is administered and from the reports of the Louisans leper colony we hope to report some cures.

When I was last over at Palo-secca I saw a boy about eight years old with a typical leonine countenance of the Nodular form of the disease.

BERI-BERI

This curious disease for which no definite cause has yet been found is occasionally seen on the Isthmus. At the Toboga Island where I have been in charge of the hospital for convalescents, there is a native village with perhaps 1500 inhabitants. This village was founded in 1530, and its manners and customs are similar to when it was founded. In this village I have found three or four cases of what I diagnosised as Beri-beri.

The principal symptom seen and complained of is palpitation of the heart After the slightest exertion, the legs were oedematous, extending to knees, the patients lie down all the time, are unable to get about except by a sort of dragging or shuffling of the feet. The oedema is not a constant symptom. They complain of pains of the limbs, especially in the calves of the legs, also pains in the stomach and chest. They get well perhaps after three or four months or they remain invalided, or they may die very suddenly with a dilated heart.

On inquiry that certain houses are prone to produce beri-beri. I also find that the removal of a patient from one house to another though only for a short distance improved the patient. Manson's theory of a toxine produced by the soil would seem to be substantiated in these cases. On the other hand their food is very insufficient, non-nitrogenuous and non-nutritious. They eat a great deal of rice and fish and empirically I do not let them have rice and fish while under treatment as the Japenese claim that rice caused the disease. It is possible that this may be a disease similar in its cause to pellagra and alcoholic neuritis. It is undoubtedly a trophic neuritis.

I always administer thymol first and they usually have uninariasis and it is possible that the texine produced by the hook worm may aggravate the condition.

ELEPHANTIASIS

This disease is met with on the Isthmus and the filaria necturnis has been demonstrted in nearly all cases. Especially easy of demonstration is this filaria in the form of the disease known as lymph-scrotum and also as adenitis of the inguinal glands.

The disease shows symptoms of exacerbation at times. There is fever, nausea and vomiting, pain in the affected parts.

It has has been pretty well proved that it is caused by the bite of an infected culex fatigans or common house mosquito. For the tremendously enlarged scretum and labia, surgical intervention is required, usually with excellent results. It is interesting to note that it was through the study of the filaria sanguinis hominis, that Manson predicted the discovery of the transmission of malaria by the mosquito.

This paper has not been intended as a didactic treatise on tropical diseases, whose name is legion, but simply to present the main point of the more common Isthmus. In addition to the diseases complaints we have to deal with on the enumerated we have the disease of temperate climes, such as typhoid fever, pneumonia, tubercolosis, etc.

The tropics seem to be exempt from no disease and have in addition their own fauna and flora. A doctor in the tropics should be a naturalist and enthusiastic in his work, the field is wide and discoveries are constantly made as to the causation of the diseases met with, and a greater opportunity for individual effort is afforded than in the temperate clime, where all the prevalant diseases have been thoroughy studied.

NEURASTHENIA.

This last disease I will discuss is Neurasthenia. This disease is very common, in fact nearly every one has it to a greater or less degree. The constant great heat the humidity, the incessant irritation, on account of the continuous high temperature, the excessive action of the skin, the extra work thrown on kidneys and liver, the discomfort of numerous biting insects produce a condition of high tension in the nervous system.

The dweller on the Isthmus after two years more or less, becomes very irritable.

Things that he would pay no attention to in a temperature climate cause him to lose control of himself. The tendency toward alcoholic excesses, the use of various drugs is markedly increased, he becomes a prey to morbid imaginings about his health, symptoms real or imaginary, are magnified, he may become, as many are here, valetudinarious, whose one thought is about their ailments.

This class of patients give the doctors as much trouble as the same class do in the states except that the same strain on the doctors nerves causes him to be less long-suffering and less courteous than his brother physicians at home.

The Neurasthenics go through pretty much the same plan of treatment as they do in the States. Enthusiastic young internists ply them with all kinds of drugs, give them electricity, hot air, cold baths massage or anything else that may suggest itself from their over flowing knowl edge of the newer remedies. The young surgeons blithely remove all organs that seem to be loose and prepare interesting papers for the Zone Medical Society on how much can be cut away from the human body and yet the mained live.

After undergoing all these different treatments, they finally land at the Taboga Sanitarium where the fresh breezes delightful bathing, and open air treatment, combined with good food and rest of mind and body, enable them in time to take up again the burden of building the canal.

DISCUSSION

DR. J. T. TAYLOR:I— would like to ask Dr. Hayne how long he continues that hypodermic of 20 Gr. quinine every three hours?

DR. HAYNE:--In regard to Dr. Taylor's question, concerning the amount of quinine. We use it to kill the parasite.. When we find the patient with parasites, this man being in a comotose condition, and unable to take quinine by the mouth, we give him 20 gr. hypodermically until he comes out of his comotose condition, or dies.

THE LOCAL AND CONSTITUTIONAL TREATMENT OF CORNEAL ULCERATION.

BY CHARLES W. KOLLOCK, M. D., Charleston, S. C.

One has but to look through a window pane that is soiled or glazed to realize the condition of those persons whose cornea have been made opaque or hazy by disease or traumatism ulceration of the cornea is seen almost as frequently by the general practioner as the oculist and in no small percentage of cases the treatment devolves upon the former. That the gravity of such cases is frequently not realized and they do not receive the attention they should can not be denied and it is the purpose of this paper to bring as forcibly as possible to the attention of the profession the great importance of early recognition of corneal lessions, the necessity for prompt and unremitting attention in order that ulceration shall be prevented or controlled before damage has been done that will impair or destroy vision and the hopeless condition of those whose eyes have been irreparably injured by inflammatin of this most wonderful structure. When we remember that the external tunic of the eye is composed of the sclera and cornea which are practically identical in structure, but with the difference that one is opaque and the other transparent, that from the latter even the blood is excluded in order that the rays of light may encounter no obstacle on their way to the retina, then can we realize with what a wonderful tissue we have to deal. In order to better understand this apparently structureless tissue, I shall take the liberty of briefly refreshing your memories about it. The outer surface is protested by a layer of epithelial cells which are transparent. Next is the anterior limiting (Bowman's membrane) strong and elastic and composed of fibers that can only be recognized under the microscope after being subjected to chemical reaction. Within this is the conea proper a layer composed of sixty lamellae of fibrous tissue whose fibers have not only a parallel arangement in each lamella but are also oblique and pass from one lamella to another thus binding the whole into a bundle so compact that it would seem that vitality would be pressed out. But such is not the case, for in this mass are interstices through which pass the corneal corpuscles and wandering cells that serve to nourish this apparently structureless body. Next to the cornea proper is the internal limiting membrane, and within this a layer of endo thelium (Descemet's Membrane). It seems scarcely necessary to say more in order to impress upon you the importance of keeping this window of the eye healthy and uninjured. It is intersting and useful to know that the epithelial covering of the cornea may be entirely destroyed or removed, and if the injury does not extend deeper that the vision will not be impaired as this covering is rapidly restored. Some years ago a lad was brought to me with the greater portion of one cornea white from contact with a hot poker. At first I thought the eye was irreparably injured but more thorough examination showed that only the epithelial layer was involved. The eye was cleansed, a drop or two of a solution of atropin instilled and a bandage applied. By the next day only a slight hyperemia of the conjunctiva remained to show that the eye had been injured. It is wonderful what a barrier to infection this delicate layer is and how, if unbroken, it will sucessfully resist the attacks of the most virulent germs and preserve the cornea proper intact. Therefore in all injuries and affections of the eye the closest watch should be kept upon this covering to see that it remains intact. So small may be the break in its surface that the untrained observer may overlook it and I shall call your attention to two methods by which abrasions of the epi-

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thelium may be readily detected. First by aid of the loupe a very strong magnifying glass, by which every portion may be carefully inspected, and the loss of covering recognized by finding a dull or non-reflecting spot. The second is perhaps the easier for those who are unaccustomed to make such examinations. One or two drops of a solution of fluorescine (gr. x to ℥) are dropped into the eye and immediately any break in the continuity of the epithelium will be stained a greenish-brown or yellow color while the epithelium remains unstained. Abrasions are usually due to traumatism and may be suspected before an examination is made on account of the symptoms given by the patient—viz: a sudden and sharp pain in the eye following a blow, scratch or simple rubbing of the lids. The pain is out of proportion to the signs of injury, photophobia is intense and lachrymatin profuse. A careful search, as advised above, will show the abrasion and a few drops of a 2 per cent solution of cocaine will relieve the pain so that a more careful examination may be made of the cornea, conjunctiva. lids and especially of the tear passages for it is in them that the danger often lurks. Firm pressure over the sacs wil prove whether secretions are present and if found diseased they should at once be excised. In these mucoceles the pneumococus is often found and infecting of the cornea will most certainly follow exposure to this germ. When no abnormal conditions of the conjunctiva and tear passages are found and there is no reason to suspect that infection has occurred at the time of injury will probably be prompt and coplete. The cornea and conjunctiva should be cleansed with a sterile solution (boric acid) and the eye bandaged. When there is doubt about an infecting agent or reason to suspect any, the eye should be bathed in a solution of argyrol (5 to 20 per cent) or the spot lightly touched with tincture of iodine or pure carbolic acid. The protecting bandage should be worn at least for twenty-four hours and not left off until a careful inspection has proved that the epethelium has been fully restored. Just now it is well to mention the so-called recurrent corneal erosion (keratalgia traumatica recidiva) which complicate an injury of this kind. Sometime after an abrasion has healed the patient may awaken with a sharp pain in the eye, which seems to have been caused by the lid sticking to the cornea, or it may come suddenly while rubbing the eye. Inspection will show an erosion at the exact site of the abrasion. Again bullae or small vesicles may be seen before the erosion takes place. Recovery is usually slower in these cases than in the primary injury. The pathology of this condition is rather obscure but some think that a chemical irritant may have been introduced at the time of injury which perhaps interfered with the cohesion of the cells, or perhaps a very mild infecting agent may have prevented the normal restoration of the cells. Some years ago a patient of mine struck one eye against the projecting corner of a shelf and caused an abrasion of the corneal epithelium. While very painful it healed readily. Sometime after she was suddenly attacked by a sharp pain in the same eye and I found a recurrent erosion. She suffered considerably with the attack, but healing was fairly prompt. Several months later she had a second attack which lasted about a month in spite of careful treatment. In this attack there was slight infection of the wound which accounted for its tardy recovery. The treatment consisted in cleansing, instilling atropine to allay iritic irritation, dionin to relieve pain and touching the ulcer with tincture of iodine. Recovery was finally complete and it is now nearly three years since her last attack. Knowing that recurrent erosions may happen should make us very careful about cleansing the first wound, protecting it until healing is complete and cautioning the patient to guard against rubbing or irritating the eye for sometime after all sensitiveness has disappeared. The pneumococal ulcer, first described by Saemisch in 1870, is perhaps one of the most common forms of ulceration of the cornea. It is usually caused by the pneumococcus infecting an abraded spot at or near the center of the cornea. It is common among mechanics, laborers and others

exposed to injuries from foreign bodies, dust, etc. A round grayish opacity is seen which has caused a slight loss of corneal substance and interferes with vision rather than causes discomfort. It has a tendency to creep, hence its name of ulcus serpens. It finally involves the entire corneal surface and is followed by perforation, staphyloma, or phthiss bulbi. The most favorable result is leucoma. An hypopyon forms quite early and is usually accompanied by iritis. Treatment in these cases should be prompt and persistent. If the source of infection is from the tear sac it should be excised. The floor of the ulcer should be carefully cleansed of necrotic masses by a spud or curette, or by a fine stream of bichloride solution (1- 000) thrown from a hypodermic or similar syringe. The overhanging edge of the ulcer should be clipped away with scissors and the intire field of ulceration touched with tincture of iodine or preferably with pure carbolic acid. These applications may be made by wooden tooth picks that have been soaked in the solution. After this solution of argyrol, protargol (5 to 20 p. c.) may be dropped in the eye several times aday. Atropine should of course combat iritis and 1 or 2 drops of dionin (1 to 5 p. c.) may be instilled 3 or 4 times a day to relieve pain. When pain is very intense, the progress of the ulcer rapid, the hypopyon large and perforation imminent, cornea should be incised after the manner advised by Saemisch. This consists in passing a graefe knife from one margin of the ulcer through the floor into the anterior chamber and coming out at the opposite margin. The chamber is quickly empted, tension relieved and frequently improvement follows. The anterior chamber should be opened every day until the ulcer becomes clean and healing begins. Vision in the most favorable cases is much impaired but when any portion of the cornea remains clear an iridectomy may improve the vision. It is obvious to all that early recognition and prompt and effectual disinfection of the ulcer can alone save these eyes.—It has been recently proved by bacteriologic investigations that other germs besides the pneumococcus can cause spreading ulcers, such for instance as the diplobacillus. However recognition of the germ is less important than prompt and vigorous treatment.

Ulceration of the cornea frequently takes place during the various attacks of purulent conjunctivitis such as those caused by the pneumococcus, streptococcus, staphylococcus and most serious of all, the gonococcus. In these cases ulceration is preceded by a softening if the epithelial layers which permits the entrance of the germs to the cornea proper. The superficial layer soon breaks down and the ulcer tends to deepen rapidly and cause perforation. Destruction of the corneal tissue is very rapid in these cases and the surgeon is handicapped by not being able to remove or effectually disinfect the source of infection. It is most important to learn as early as possible the kind of infecting germ for upon this knowledge depends to a certain extent the treatment. In all cases of purulent conjunctivitis cleanliness is of extreme importance. These eyes should be cleansed as often as it is necessary to prevent the discharges from remaining in contact with the cornea. A sterile, non-irritating solution (boric acid) used warm is best adapted for this purpose. Great care should be taken by the surgeon and attendant that no corneal abrasion is made by touching the cornea with the pipette nozzle of syringe or by rough cleansing with cotton. Several reports have been made of the efficacy of the serum treatment when the inflammation was caused by the pneumococcus, staphylococcus, streptococcus, though inflammation due to the last named is rare. Roemers polyvalent serum has been most used though on injection of dead streptococci has proved successful. For gonorrhoecal ophthalmia silver and its salts are of course the proper remedies. These are employed in almost as many ways as there are employers. There are many who stand by the old way of treating the disease by applications of solutions of nitrate of silver in strength from five to sixty grains to the oz., while just

If ulceration once begins during an attack of one of the virulent forms of conjunctivitis it is most difficult to control and one can usually congratulate himself if the entire eye is not lost. Efforts at cleanliness should be redoubled, atropine and dionin should be instilled and in cases of gonorrhoeal ophthalmia the applications of silver should be made oftener and of increased strength. It is doubtful in these cases if anything will stop the ulceration except the actual cautery which should be vigorously and fearlessly used.

I do not believe that solutions of argyrol or protargol are of much use at this stage, but as they can do no harm the entire eye should be actually deluged with them at least every two hours. In cases of pneumoccocal, stapylococcal, and streptococal ulceration the serum treatment should be accorded a prominent position. In several cases of obstinate corneal ulceration of no special type Radcliffe has reported excellent results from the use of typhoid extract in small doses (3 grs. 3 times a day) and at the same time dropping into the eye a few drops of the solution (gr 15 to ℥ xv) sev eral times a day. He thinks it has a dual action: "first on the lymphatic system and secondly in increasing metabolism and nutrition."

Phlyctenular Ophthalmia which occurs principally in young children constitutes the largest percentage of cases that are usually treated at public dispensaries. It undoubtedly is due to lack of good nutritious food, of bad hygienic surroundings and hereditary weakness. One has but to see a single case to be able to recognize it even from a distance. The child avoids the light, slinks into a corner, covers its face and refuses to be comforted. Closer inspection shows swollen lids that are often excoriated at the edges and corners, lachrymation, a running nose, ulcerated nostrils and excoriated upper lip. Blepharospasm is so great that it is difficult to separate the lids without an elevator which should be used in order that a clear view of the cornea may be had. There we see ulcers at the corneo-seleral edges and scattered over the cornea, some large and some small, some fairly deep and others barely involving Bowman's membrane. The conjunctiva is swollen, congested and velvety and the discharge is usually muco-purulent. Undoubtedly these cases originate from some systemic or constitutional disorder, but it is also true that infection from surroundings and rubbing the eyes with dirty fingers plays a most important part. Improvement in the general condition alone of these patients will often bring about a cure and a change of climate always does good. The diet should be regulated for the parents will often say that the child eats any and everything and be surprised that it should not. Calomel to clear out the bowels is very useful as a starter and of course iron, arsenic, cod liver oil, etc., help to build up the strength.

The eyes are the hardest part to manage for it requires an expert to cleanse and make applications properly to them. These cases should be placed in a hospital whenever possible and kept there until the eye conditions improve. The head of the child should be held between the knees of the surgeon, the lids and cornea and nose cleansed, the ulcerated edges of the lids and nose should be touched with a solution (gr. x to ℥) of nitrate of silver and atropine instilled to allay corneal and iritic irritation. The yellow oxide of mercury ointment (gr. s s - 1 to ℥) is often used for the ulceration and is frequently efficacious. Sometimes it is necessary to curette or touch these ulcers with tincture of iodine pure carbolic acid or other cauterants before they will heal and finally these children should be kept as much as possible in the open air and the eyes never bandaged.

Of course when perforation takes place in corneal ulceration the iris falls into the opening and unless immediately freed becomes attached. It cannot be removed for the pressure of the lens from behind keeps it there. Many advise the excision of the plugging part, but it seems to me a wiser treatment to leave it there for excision does not prevent further attachment and if left there it acts as a partial, if not effectual barrier to the entrance of infectious material.

as numerous are those who extol the virtues of argyrol, collargol and protargol. Healing is little if any retarded by its presence and in time the slight staphylomatous proturbance disappears. After all inflammation has disappeared and when the parts can be easily seen, the synechiae may be freed or an iridectomy performed if necessary to improve vision Furthermore I cannot approve of the use of eserin, as advised by some, when an ulcer is situated near the periphery of the cornea and likely to perforate. Even if the pupil were tightly contracted by eserin the iris would prolapse if perforation should occur as it is irresistibly carried by the rush of the aqueous humor and pressed forward by the lens from behind. Again eserin is poison to an iris that is sensitive, or threatened by inflammation and what we particularly wish to avoid in all cases of corneal inflammation is iris involvement. In only one class of corneal ulcers have I seen eserin of any value and those are the indolent ulcers, which are sometimes seen in old trachomatous cases which neither improve or get worse. The stimulation and improvement in some of these cases from the use of eserin is at times wonderful as I often saw when an interne at Wills Hospital in Philadelphia.

Malarial infection at times seems to cause the dendritic form of ulcer. In two such cases, a brother and sister, who were under my care, local treatment caused no improvement. Finally a blood examination showed the presence of the plasmodium, and treatment by quinine and arsenic was quickly followed by recovery.

Direct syphilitic infection of the cornea is rare and while ulceration may occur in a syphilitic person it is probably due to the weakened physical condition which cannot withstand local infection from other causes. Constitutional treatment as well as local is of course necessary in such cases.

Subconjunctival injections for corneal ulceration are highly extolled by many men prominent among whom is Darier, of Paris. Various preparations of mercury, such as the bichloride and cyanide, have been frequenty used and apparently with excellent results. Injections of physiological salt solution have caused improvement in old corneal ulcers by improving the circulation and therefore the nutrition of the parts. Darier says, for myself, three agents should be our first and most certain adjuvants, because they are absolutely harmless. (1) Dionin in powder applied to the ulcer, (2) subconjunctival injections, (3) serumtherapy."

The actual cautery is often used for disinfecting a corneal ulcer, but the difficulty of controlling its action is regarded by some as a serious objection, however, in these cases when the cornea seems to be actually melting away this method of treatment would seem to be the most effective. I am convinced that the suppuration which sometimes follows the operation for cataract, and which not infrequently begins at or quickly involves the inner edges of the corneal wound can only be stopped by the boldest application of the actual cautery to the entire length and breadth of the incision without and within the eye.

Finally it may be said that cornea ulceration will not occur as long as the epithelial layer remains intact.

That when an abrasion occurs it should be carefully watched and treated as a most serious condition.

That any signs of ulceration should at once be combatted by a thorough disinfection of the part even though sound tissue must be sacrificed to stop the advance.

That the general condition of the patient often requires upbuilding in order that convalescence may continue to recovery. That rest in bed is imperative in all serious cases.

Tact may be difined as the ability to favorably impress and adroitly manage other human beings. Tact is largely intuitive, but can be developed by eport and exeercise. It is one of the most desirable asserts for business and professional men, and is usually most marked in individuals with an equable and well controlled temper—that even temper or equanimity which should become a fixed characteristic of advanced life.—*Denver Medical Times.* August.

PREVENTABLE BLINDNESS.

BY EDWARD F. PARKER, M. D., Charleston, S. C.

Unnecessary blindness is due to "ignorance of the conditions which produce blindness", ignorance of the proper care of the eye in the school room and ignorance of the delicacy of the organ of sight."

Knowledge and promptness in the practical application of it are the two great factors in diminishing the efficiency of these causes. The medical profession has always been constantly alive to the importance of extending its knowledge and of giving it to the public, but we cannot too often call attention to a subject of vital importance.

The census report shows that in the United States blindness is more common among males than females, is distributed irregularly in proportion to the population and the degree of education, is in greater proportion among the foreign than among the native born, is frequently produced before the age of two, and is prevalent among all races and conditions.

Statistically we may classify blindness as due to:

1.—Diseases causing corneal opacity, affecting chiefly children and tracable to severe inflammations of the conjunctiva and cornea.

2.—Venereal and other diseases affecting the iris, ciliary body and choroid.

3.—Nervous diseases caused by errors of refraction and diseases of the brain and spinal cord.

4.—Congenital diseases.

5.—Accidental Causes.

We may estimate that one, two and three are responsible for about 75 per cent and four and five for about 25 per cent, of the total blindness in the world

Clinically we may classify blindness as preventable and inevitable.

Ophthalmia neonatorum.
Trachoma.
Purulent conjunctivitis.
Congental Syphilis.
Sympathetic inflammation.
Occupation diseases.
Accident in work.
Accident in play.
Congenital defects.
Optic nerve diseases.
Accident in work.
Accident in play.

In numerical importance we may place ophthalmia neonatorum first, congenital diseases second and trachoma third.

Considering the preventable causes of blindness, we find that "one quarter of all the blind shildren in all the blind schools of this country are unnecessarily blind."

Ophthalmia neonatorum is a contagious disease appearing at birth preventable by prophylactic measures, curable by skilled medical treatment, fatal to eyesight and ending in total blindness if preventive and curative measures are not taken.

The proplylactic treatment recommended is a few drops of a one per cent solution of silver of nitrate to be used in the eyes of all new born children and the curative, thorough cleanliness with the aid of boric acid solution, a 25 or 50 per cent solution of argyrol, or a 10 per cent solution of protorgol and atropine when indicated.

Trachoma is a contagious disease, insidious in its inception, chronic in nature, easy to diagnose and curable by the operation of expression and suitable hygiene.

Purulent conjunctivitis in the adult is usually due to gonorrhoea and curable by the use of cleanliness, atropine, argyrol or protargol solutions. Only a small percentage of patients with gonorrhoea are advised and warned of the danger of eye infection by the general practitioner.

Congenital syphylis, responsible for a large number of cases resulting in

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blindness, is too frequently suspected and if promptly treated with inunctions of mercury might easily be minimised as a potential factor. Its prophylaxis is one of those sociological problems with which the world is trying to deal intelligently.

Sympathetic inflammation, or the involvement of a good eye from metastasis, is curable by prompt removal of the offendinga eye and preventable by prompt recognition of the danger to the eyesight of one eye from the presence of another damaged infected eye.

Occupation diseases admit rational prophylaxis which, largely from indifference on the part of the individual, is not often undertaken.

In the accidents in work and in play the liability to infection even in the simplest injuries is not duly appreciated by the general practitioner. Thorough disinfection of the wound, the prompt use of atropine to dilate the pupil, frequent cleansing with boric acid solutions and keeping the eye at rest with a suitable bandage would save the eyesight to many sightless eyes.

Inevitably, congenital defects, diseases affecting the optic nerve, and accidental injuries will always result in incurable and unpreventable blindness. Many eyes are injured by the use of patent remedies and harmful or useless domestic remedies.

"The failure on the part of the general practitioner or oculist to distinguish between diseases requiring opposite treatment such as iritis and glaucoma and the neglect of apparently slight inflammation of the eye are too often the cause of blind ness."

"In spite of all our knowledge the preventable blindness continues year after year and as the roughly estimated cost to the state of a person blind from birth and dependent through life approximates 10,000", it is primarily a matter of large concern to the state because it assumes the burden of caring for those who are blind and helpless.

In South Carolina there are 77 white and colored males and females, the majority males and white in the Institution for the Blind and Deaf at Cedar Springs. In 1900 census shows 491 white and 611 colored blind people.

Up to this time ophthalmia neonatorum is the only one of the causes of preventable blindness which we attempt to control by state regulation.

In accordance with the plan approved by the American Medical Association, it is proposed to organize the work of preventing blindness from this cause by the concerted efforts of representatives of each state from the section of ophthalmology and the plan proposed is,

"That through the state the work be taken up in each county society and be presented at its next regular meeting by some of its members; and that the sanitary measures be considered; the care of the discharges of mothers, the bath of the child; the danger of the general bath which Schermer calls "Gift Wasser"; the necessity of bathing the eyes with clean a solution not otherwise used, and such other points as may be important; in other words, the general sanitary measures needed to protect the eyes of the child.

2. That the importance be emphasized of the greater protective value of antisepsis over asepsis, which is in full accord with modern medical practice.

3. That it be shown that the use of a prophylactic is a protection to the physician, as whatever may subsequently occur he will have followed approved measures and will have taken the necessary precautions while failure to do this leaves him justly open to censure.

4. That the State Society endeavor to secure that written assurance on the part of each memberof each County Society that he will use some measure of anticeptic care in each case that comes under his charge, unless there be special reasons why he should not do so and that these appear upon the birth certificate.

5. And, finally that through the co-operation of the State Medical Society and the Department of Public Health authority may be secured with an adequate appropriation to enable the department to manage this as it manages other infectious diseases, obtaining reports of the number of cases occuring with the results, sending out educational matter, and providing for the gratuitous distri-

bution of the prophylactic."

This committee of which I am the member from South Carolina is desirous of obtaining the folowing information,

1. "Of any laws enacted or proposed governing the practice of midwifery or the reporting of cases of ophthalmia neonatorum. Are physicians required to report this disease? Are prophylactics provided by the health department for gratuitous distribution?

Do the regulations provide for the early registration of birth certificates whether a prophylactic has been employed and when omitted the reason for its omission?

2. Have any special resolutions been proposed or action taken by the Medical Society for the control of this disease?

Have any measures been taken to determine how large a number of new-born children have been infected? and who is responsible for these infections."

To all these questions (save the first) the State health officer and the health officer of Charleston answer negatively.

South Carolina has never authorized the collection of data such as birth and death rates and the vital statistics necessary to the intelligent classification and study of the distribution and regulation of disease among its people and is just beginning to provide the Board of Health with sufficient funds to exercise in part its proper functions.

DISCUSSION.

on papers of Drs. Jervey, Kollock and Parker.

Dr. Rosa H. Gannt.

I am very glad to have heard these papers, and I think we ought to have more papers read on this subject. I am glad to learn also that there is public legislation on the matter, and at the same time I am sorry to know that the laws are not enforced. Several days ago, I had a patient brought to me with a case of opthalmia neonatorum. This case had evidently been treated by the physician in charge of the case with salt water. This was one of the most pathetic cases I have ever known. The parents of the child had been married five years and this was their first child, and the case was absolutely hopeless, and it was my painful duty to tell the parents that their child was blind.

I feel that if we had more papers and more discussion of this subject, that the general practitioner would be more care ful, and more able to diagnose his case, and if unable to properly treat the case, would refer it to a specialist. This physician I referred to, who had charge of the case I mentioned, was within a radius of 20 miles of six specialists.

Dr. M. B. Monson.

The reason I want to discuss this paper is because all seem to think that all cases of opthalmia neonatorum in the new born were due to the carelessness of the general practitioner, and I think that three fourths of the work done to the babies in this state is done by ignorant negro women. The paper just read gives us the maximum of cases produced in the State Institution for the Blind and this is not all chargeable to the neglect of the general practitioner. There are other points I would like to discuss, and I hope all will take part in the discussion.

Dr. W. Peyre Porcher:

I want to say something in regard to Dr. Parker's paper. I have been helped out of too many holes by my old friend nitrate of silver to have him cast aside without saying a word in his behalf. Now, I would try not to belittle any new preparations, but we all know that some of the cases of pink eye, or whatever you want to call it, are very often intractible and I sometimes worked with it for quite a while without obtaining satisfactory results, until I used nitrate of silver when the desired result would be obtained.

While I am not belittling other remedies, I do not want to see nitrate of silver cast in the shade. I think it is a good thing in cases of conjunctivitis.

Dr. E. F. Parker:

Replying to Dr. Monson, I want to say that I did not intend to knock the general practitioner. I was knocking the occulist as much as the general practitioner. They make mistakes also, which result in some of the cases of blindness which we have.

I also wish to say that I did not say anything against nitrate of silver. Dr. Porcher says he does not want to see nitrate of silver put in the shade. He is mistaken about that; you have to keep it in the shade or it is useless.

In regard to the paper on corneal ulceration I was very much interested in the classification of the different forms, but it seems to me that all of the various forms of corneal ulceration could be classified as one for, at the present time, we have only one treatment for it, and that treatment is simply dependent upon a general principle. I think we all clense them, and I think we all differ as to the method of disinfection. It is the result of my experience and the experience of others, that has caused me to abandon all other methods except the actual cautery, which I apply very easily after heating the instrument over an alcohol lamp, and I very seldom employ the incision. I think when the trouble has gone far enough to make an incision necessary for the removal of pus, that the eye is practically gone already.

Dr. A. B. Knowlton:

I just wanted to say that, if we could secure a less night-rate of indulgence for the people, we would have less use for nitrate of silver.

Dr. E. W. Carpenter:

I was very glad to hear the explanation of the appearance of this paper in the surgical section. I think there are very few men in the surgical section who come in contact with this disease. The general practitioner is the man to be educated as to his responsibility and to sift the matter down to the bottom, I think not only the medical profession, but the laity should be educated in their knowledge of this disease, so that they will hold the physician as criminally responsible for mal-practice, if he permits for even an hour, purulent disease to remain without the most efficient treatment that can be secured for it . The poverty of the patient is no excuse for neglect. If the specialists are not in touch with them, there should be some way for the uplift of humanity, so that the general practitioner shoud be instructed.

I think I see the day when post-graduate instruction will be universal, and there will be no practitioner so antequated as to tell the nurse to bathe the eyes with salt water, and sees the patient in a few weeks, either totally blind, or disfigured for life.

I say this in no spirit of animosity, but with the feeling that the responsibility in these cases rests with the physician. I concur in all the speaker has said in the essential points, he has brought out, but he did not enter into details and I believe he stated that he did not purpose to do so.

In reference to the second paper, I take it that the speaker prepared this paper for the oculist, and from the stand point of the ocuist, it is an admirable paper. He has left nothing unsaid which would add force to it, but from the standpoint of the general practitioner, I differ with him. He advocates the universal use of atropine in corneal ulcers. I should say for peripheral perforations, eserrine should be recommended for use by the general practitioner, because atropine often sets up a glaucoma. He mentions dionin, which is a very useful drug. He advocates bandaging the eye, and I think we all agree with him in that. I think there is perhaps nothing which gives us such pleasing results as to fill the cul-de-sac with bi-chloride vasaline in the intervals between the washing.

Dr. Charles W. Kollock:

Dr. Parker mentioned the passage of a law by the State on this question and to show you how hard it is to get a law passed and to get it enforced, I will tell you that in 1900 the American Opthalmological Society appointed a representative in each state, in which they had members, to go before the Legislature and get a law through for the Prevention of Blindness. I was appointed from this State and, after explaining the matter to the State Medical Asssociation I was elected to go before the Medical Committee of the Legislature. They asked me why I had come there to get such a law through; they said it might do for people in the cities but there was

no need of such a law for people in the country. I replied that the last case I had was in the country. After much talk, they agreed to recommend the passage of this bill, and Mr. Bacot took charge of the bill for me, and to show with what respect the bill was treated, it was known as "Bacot's sore-eyed Baby Bill."

The Bill was finally passed, and it was ordered that copies be struck off and sent to every health officer and committee in the State. That has never been done.

I think this Association should request that the Secretary of State have copies of this Bill made and sent as directed to all towns of one thousand inhabitants. They would not agree to let the bill affect towns with less than 1,000 inhabitants. Did you ever hear anything so ridiculous?

As far as the Saemisch operation is concerned, which Dr. Parker speaks of, it is an old operation, but he is mistaken in thinking it is not used by the best men now. In the latest book on the treatment of Diseases of the Eye, it is mentioned in many places. We frequently do not let our patient's eyes get in the condition that makes the operation necessary, because we understand the treatment better than we did some time ago, but the cases of hypopyon keratitis, that are rapidly getting worse, the operation is to be recommended, as it lets out the infected matter relieves the patient, often stops ulceraion and the eye gets well.

Dr. Carpenter mentioned the use of eserine. That is an old theory. I admit that there are some men who advise its use, but it is an old theory and it won't work in practice. The man who puts eserine into an acutely ulcerated eye. will make it worse.

Now, nearly every man has his own method of treating these cases, and I think it is best to say that in view of the fact that one man gets good results with one drug, and another man from another, that after all, it is the thoroughness with which the treatment is applied, and not necessarily the use of one particular drug or treatment that brings about the desired result.

MUSCA DOMESTICA; THE COMMON HOUSE FLY.

BY F. A. COWARD, M. D., Columbia, S. C.

The fly, like the poor, we have with us always. Of all the species of flies which swarm about and over us and our food before and after its digestion, the common house fly is by far the most numerous, forming 98 per cent of the total, and being world wide in distribution.

Aside from its role as a carrier and a spreader of disease, its filthy habits, the annoyance of its presence on our bodies, and the disgust which its contemplation inspires are themselves sufficient to demand its extermination. Against which array of damaging evidence its single defense, that of its role as a scavenger, is totally inadequate and negligible on the ground of inefficiency.

The preferred breeding place is moist horse manure, but cow dung and human excrement also serve its purpose, likewise any other decomposing animal or vegetable filth wherever the proper conditions of warmth and moisture exist.

The female lays 120 eggs in manure. In eight hours the larvae are out of the eggs. In ten days the development of the brood is complete. Therefore, fifteen broods a season may be developed in the climate of this state; by the first of June the offspring of twelve flies that have hibernated through the winter may number 40,000 under favorable conditions.

Howard has observed 200 larvae in a cubic inch of horse manure; 1200 to the pound would be a low estimate.

Read before the S. C. Medical Association Summerville, S. C., April 1909.

The sudden swarms observed in the spring are explainable in this way. A ten-day or fortnight period of warm weather is sufficient for the winter's survivors to propagate a brood. The adults hibernate during the winter indoors, in crevices, closets and warm parts of the house and should be exterminated then and vigorously pursued. Any rise of temperature stirs them to activity.

Authorities differ somewhat as to the range of any individual fly, while, when favored by winds they may travel many miles perhaps, this is accidental. As a rule flies do not exceed a few hundred yards in horizontal, nor a hundred feet, in vertical, range, corollary, if you have flies, they are yours, or at most, your neighbor's.

The life of the fly is naturally short, a few weeks ordinarily, but in the dormant hibernating stage they readily live through a winter period of several months.

So well is the activity of the fly as an infection vehicle now understood that I shall pass it with the observation that the fly's method is a mechanical one, infectious matter is carried on its body, legs, and sucking apparatus, also examination of the familiar "flyspeck" shows that the feces of flies fed on various disease germs contain these germs in viable and virulent condition.

For the reduction or perhaps extermination of this nuisance we must have first a spread of the above knowledge among the proletariat and laity generally, and medical men are the ones to take the initiative. Let us all then, beginning today, begin with one accord to preach the gospel of fly extermination and first of all in our own home.

Doors and windows should be screened, and above all, kept shut. The absurdity of an open screened door or window is as apparent to the mind as it is frequent to observation. Darken rooms, especially dining rooms, for as many hours as possible. The fly loves light, it acts on him like champagne. as his morning liberties with our ante-breakfast slumbers will testify.

Manure of every sort should be removed from premises and not kept stacked in piles, remove it immediately at that. Every stable should have a dark manure closet, with an inside door to the stable through which each day's accumulation may be passed to the closets, and an outside door from which the contents may be removed, less frequently perhaps, yet as often as practicable. Both doors should be fly tight and kept closed the ventilator pipe should have a cap of gause, which should be removed when broken. Abundant use should be made in the stall and closet of chloride of lime, isolated droppings about yards should be immediately removed or buried, and other animal and vegetable filth, refuse, old papers, etc. removed as fast as formed or observed. After the first great clean-up these measures will not require labor out of proportion to the benefit derived.

Privies must never be open beyond. a tight door should be fitted and kept shut, covers that should fit should be made for seat openings and kept on, doors should fit and be kept shut and the ventilator opening should be screened abundant use of chloride of lime and frequent cleanings are imperative, no privy vault on surface closet without box or or pails should be permitted under any circumstances. The best design is that of a cement vault, its bottom slightly above ground level and its walls high enough to keep out surface drainage. A portion of the vault extending outside the building far enough to permit cleaning is covered by a tight fitting trap door. To combat carelessness of children and employees, all doors and traps should be fitted with automatic apparatus, or springs or weights of some kind.

The use of fly paper and traps is a by no means valueless adjuvant in the fight, particularly in cool weather, when the comparatively few hibernators may be fought with more success.

Let us then go out with the slogan—kill the fly wherever you see it, bury, burn or banish all filth, shut a screen door or window whenever and wherever you see it open or whosesoever it may be, and keep the lid on the privy seat.

THE PREVALENCE OF PELLAGRA IN THE UNITED STATES.

A Statistical and Geographical Note with American Bibliography.

BY C. H. LAVINDER, M. D., Passed Ass't Surg'n, U. S. Public Health and Marine-Hospital Service, C. F. WILLIAMS, M. D., Secretary South Carolina State Board of Health and State Health Officer and J. W. BABCOCK, M. D., Physician and Superintendent State Hospital for the Insane, Columbia, S. C.

Forty-five years ago two cases of probable pellagra with mental symptoms at the annual meeting of the Association of Medical Superintendentsof American Institution for the Insane held in Washington, D. C. Exclusive of one case Institution for the insane be in Washington, D. C. Exclusive of one case reported by Dr. S. Sherwell of Brooklyn, N. Y., in 1883 and one each by Dr. Sherwell and by Dr. H. F. Harris of Atlanta in 1902, the disease has till recently 1906-07 either disappeared or been overlooked, or what is more likely the physician when first studying one of these puzzling cases and inclining to the diagnosis of pellagra has accepted too readily the assertion of all authorities that pellagra does not exist in the United States, and has therefore given another and commoner name to his case (See final note) although his professional conscience may never have been satisfied. There seems, however, to be no doubt that some physicians— for one Dr H. E. McConnell of Chester, S. C.—did recognize the disease termed pellagra during 1903, although unfortunately he did not publish his observation According to E. J. Wood of Wilmington, N. C. S. H. Bellamy of Wilmington and J. B. Wright of Lincolnton, were the first to recognize the disease in North Carolina prior to 1907, but again unfortunately they did not publish their observations.

In spite of authoritative denial of the existence of pellagra in our country, a number of cases of the disease were recognized and reported independently in 1907 by medical officers of Alabama and South Carolina asylums. In the summer of 1908, the disease was identified with Italian pellagra by South Carolina physicians, Dr. J. J. Watson and one of the present writers (J. W. B.), who visited Italy for the purpose of studying the disease. Following these observations and publications, pellagra has been recognized in many different localities, such as Wilmington, Morganton and Charlotte, N. C., Augusta, Milledgeville and Atlanta Ga., and many places in South Carolina as well as in other states. For the last year and a half, the South Carolina State Board of Health has been actively investigating the pellagra problem, by special inquiry, conference and finally by original research with the co-operation of Surgeon General Wyman of the U. S. Public Health and Marine-Hospital service, who assigned (May 1909) one of the present writers (C. H. L.) to duty at Columbia and vicinity for this purpose.

Recently a letter of inquiry (See below) about pellagra was addressed by another of the present writers C. F. W.) to the Superintendents of State Hospitals for the Insane in the United Sates, and the following table embodies their replies:

To 164 inquiries 120 replies were received about 20 being in the affirmative.

New York.—Number of cases, few (near Brooklyn.)

Pennsylvania, Dixmont. Number of cases, 1; recognized 1909 (Hungari Maryland. Number of cases 1 or 2; recognized 1909; probably existed since 1905, male 1—female 1.

Virginia (Staunton) Number of cases 1 (?); recognized 1908.

Virginia (Petersburg) Number of casse 1 (?).

North Carolina (State Hospital, Ral-

Read at the Abbeville Medical Society's Pellagra meeting, Abbeville S. C. August 6 '09.

eigh) Number of cases, several; recognized 2 or 3 years probably existed 10 years.

North Carolina (State Hospital, Golds boro) number of cases 8 recognized 1908; probably existed 10 years; female 8.

North Carolina (Dr. Taylor, Morganton) Number of cases, 8; probably existed 22 years.

North Carolina (State Hospital, Morganton) Number of cases 20; probably existed 5 years.

North Carolina (Dr. Wood, Wilmington) Number of cases 75 in State since 1905, and 43 were females and 15 were white.

North Carolina (Dr. Nisbet, Charlotte number of cases 18, whites 16, negroes 2.

South Carolina (State Hospital, Columbia) Number of cases 125; recognized 1907; probably existed 25 or 30 years; male, 25 per cent; female 75 per cent.

South Carolina (Dr. Corbett, Greenville) Number of cases 3.

South Carolina (Dr. McConnell, Chester) Number of cases 13.

South Carolina Dr. Neuffer, Abbeville) Number of cases 9.

South Carolina (Drs. Neil and Epting, Greenwood).

South Carolina(Dr. Robt. Wilson, Jr. Charleston; Roper Hospital) Number of cases 15, 11 colored; 4 white—9 females; 6 males. Conservative estimate of number in city in past year, 30.

South Carolina (Dr. Williams, Columbia) Number of cases, 500 estimated in State.

Georgia (State Sanitarium, Milledgeville) Number of cases 225, recognized 1907; probably existed about 25 years; male 25 per cent; female 75 per cent.

Georgia (Grady Hospital, Atlanta) Number of cases 10; recognized 1907.

Georgia Dr. Moore, Augusta.)

Florida (State Hospital, Chatachoochee Number of cases 12; recognized 1907; probably existed 4 years—male 5; female 7.

Alabama (Brice Hospital, Tuscaloosa) Number of cases 25.

Alabama (State Hospital, Mount Vernon) number of cases 160, and 2 private; recognized 1906, probably existed since 1906, male small number; female, large number.

Alabama (Dr. G. H. Searcy, Tuscaloosa) Estimate number of cases in State 150 to 200.

Mississippi (State Hospital, Jackson) Number of cases 1; others in the State.

Mississippi (State Hospital, Meridian) Number of cases, 2; recognized, 1907 (?) male 1—female 1.

Louisiana (State Hospital, Pineville) Number of cases 3. Dr. Thomas, Supt., (July 28th-09) expresses the belief that this disease is as common in Louisiana as it is in the Carolinas.

Tennessee (Baptist Orphans Home, Nashville) number of cases 11. Other cases in the State.

Kansas (State Hospital, Topeka) number of cases 6 (?) probably existed 15 years, male, 3 female, 3.

Kansas (Epilepte Colony, Parsons) Number of cases, 1; probably existed, Native

Illinois Since this report was first made, one of the writers (C. H. L.) has (July 19th-09) identified 3 cases of pellagra at the Cook County Asylum at Dunning, Ill. In the last year or year and a half six other fatal cases have been under care there.

This table seems to show that there are records of at least 1000 cases of pellagra scattered in 14 States. More than half of these have been reported from asylums or similar institutions. Sporadic or suspected cases have also been reported from Texas and Arkansas as well as from New York and Virginia.

Dr. E. J Wood of Wilmington, N. C., has records of 300 cases in the South, 70 of which ocurred in North Carolina. It has been estimated that many hundred cases exist in Georgia, and Dr. Walker of the State Sanitarium, Milledgeville, says that 2 per cent admissions in 1908 had pellagra.

One of the present writers (C. H L.)

has reported to the Surgeon-General of his service a conservative estimate of 1500 cases in the Southern States, since 1906. To show how conservative this estimate is it should be recalled that if 500 cases have been observed in asylums in the last two or three years; then upon the estimate made by the Italians that only ten per cent became insane the total numebr of cases would be nearer 5000 than 1,500.

The asylum officers in Maryland have not observed cases, but Dr. W. S. Thayer of the Johns Hopkins Hospital has recently recognized and reported a case of the disease in Baltimore, and is satisfied that he observed a similar case several years ago (1905.)

Nor does the disease seem to have appeared in the Tennessee hospitals for the insane, but 11 cases of pellagra have been reported as occurring in the Baptist Orphans' Home at Nashville.

Dr. Dewing of the Long Island State Hospital, Flatbush, Brooklyn, N. Y., reports that he has had no cases of pellagra in his hospital, but a few cases apparently from other sections of the country" have been observed in his vicinity.

One of us, Dr. C. H. Lavinder observed in New York, in 1908, a case of the disease in a white American seaman in the coastwise service.

Although not within the boundaries of the United States, it deserves passing note that Dr. B. K. Ashford has reported (N. Y. Med. Jour June 278-08 page 1239) the observation of one case in Porto Rico, and Dr. J. A. Hayne has observed two cases on the Panama Canal Zone.

While absolute accuracy is not claimed for these statistics, they may be regarded as a fair indication of the extent and distribution of pellagra, as now recognized in our country, and their presentation at this time is made for the purpose of emphasizing the growing importance of the pellagra problem in the United States.

The following interrogations were used by one of the present writers (C. F. W.) in gathering statistics of pellagra:

1. Have you seen any cases of Pelagra in your Institution or your State?.....
2. How many cases have you seen?..
3. How long since you recognized the disease?.. .. ..
4. If at all, how long do you think the disease has existed in your section?....
5 What proportion were male..... female?.. .. ..
6. What was the occupation of these affected .. ..Nationality.....
7. Do the products of Indian Corn (hominy or meal) form a part of the dietary of the patients, and are these products derived from native or shipped corn?.. .. ..
8. Were your patients from the poor .. ..;moderate... .. .. ..or well-to-do classes.. ....and were they from the city.... ....;town.....or; country.. ....M. D.

Supt..... .. ..
State of ....

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Note—There seems little doubt that the condition now recognized as pellagra has existed in the Southern States for many years—25 of 30 at least, and has been regarded as an unusual manifestation of either tuberculosis, syphilis, malaria, acute delirium, spinal hook-worms, dermatitis, exfoliativa, eczema, etc. Careful search through medical literature may disclose the fact that cases of pellagra have been reported under these or other diagnoses.

THE ETIOLOGY OF PELLAGRA.

BY C. H. LAVINDER, Past Assistant Surgeon, U. S. Public Health and Marine-Hospital Service.

Pellagra has become of interest to American medical men only since 1906, and even now it is of practical importance chiefly to only one section of our country. Its appearance, however, as experience in other countries has amply demonstrated, is a matter of much gravity, and the question may in time assume theproportions of a national calamity.

A disease of this endemic-epidemic type is naturally of great interest to me as an officer of anational public health service and of course my more direct interest lies, for a like reason, in the direction of its etiology and epidemiology. Our experience with the disease in America has not been extensive, and our literature, although rapidly increasing, is as yet of small volume. It is my purpose in this paper then to attempt only a brief, general review of what is known regarding its etiology.

The etiology of pellagra in any difinite scientific sense, is essentially unknown. In the words of a recent Italian writer, "the actual knowledge of the cause and nature of pellagra, one may say, remains still within the realm of hypothesis, although an extraordinary, scientific activity on the part of students, especially Italian students, has thrown light upon many important points." In spite of this fact, however, even a brief review of the extensive literature will soon convince one that profound convictions are held as to its nature and cause by the vast majority of students of this interesting disease.

The very early views entertained as to the nature and cause of pellagra, such as its being an atypical expression of leprosy, syphilis or scurvy, while interesting, possess now perhaps only historic value. For, with the exception of a small group of students, to whom I shall refer later, doubt is expersed that the disease is a distinct entity with is own peculiar morbid phenomena. Indeed, its unique symtomatology, its anatomical lesions, epidemilology and geographic distribution seems to leave no doubt upon this point.

With regard to the cause of pellagra, throughout all of its literature, there stands one supreme idea or theory. which permeates almost all authors, directs most research work, and upon which is founded practically all attempts at its restriction or eradication. This idea is the etiological relation declared to exist between pellagra and the extensive use of maize, or Indian corn, as an article of food.

This idea seems to have arisen very early in the history of the disease, and such a suspicion may possibly have been entertained by even Casal *himself (who is credited with first having described pellagra). Indeed, there are authors who are inclined to maintain that pelagra was known before Casal's day, and that even then suspicion had fallen upon maize as its cause. At any rate, the idea in a vague sort of way was an early and persistent one. It was perhaps first formulated early in the XIX century by Marzari, who believed that maize caused the disease by reason of its deficiency in certain nutritive qualities. Thus later came into tangible existence the great maize theory of pellagra and the final creation of the co called "zeist" *from zea mays* and "antizeist" schools of thought. The maize idea in one form or another has ever since held a dominant place in the etiology of pellagra.

Folowing its definite enunciation, the maize doctrine more or less rapidly began to undergo a development and a modifi-

Read at the Abbeville Medical Society's Pellagra meeting, Abbeville S. C. August 6 '09.

* Arnould, J.—in Dict. Encycl. d. Med. Par. 1886, v. 22, p. 316. D'ailleurs Casal entrevit aussi l'etiology; il pense ab uterisque atmosphera et cibis, exurgere totolem ipsius morbi causam.

cation which has continued up to the present time, with a consequent bewildering variety of opinion.

The first important step in its evolution was the announcement of Balardini's "verderame" theory. This observer noticed on the grain a greenish discoloration, shown later to be a growth of *Sporosorium maydis*, and he conceived the disease to be due to this hyphomycete. This introduced a new phase of the maize idea attributing the disease not to the maize per se but to spoiled or damaged maize. Largey trough the labors of Lombroso, who was doubtless stimulated by Balardini's conception, this idea was later developed broadly, and so ultimately came into existence what is sometimes called the "zeitoxic" school, which maintains that not in maize but spoiled maize (i. e., maize which under the influence of bacterial growth has undergone some change) must the cause of pellagra be sought.

It seems unnecessary to trace step by step the evolution of the maize doctrine, and it will perhaps serve every purpose to state briefly the present views hed by various writers on this subject. But before doing so it may be perhaps more logical to state with equal brevity the general grounds upon which is based an etiological relation between maize and pellagra. The broad statements may be given as follows:

1st. It is declared that history and observation show clearly that the first appearance of pellagra and its later dissemination followed more or less closely the introduction of maize culture into Spain and its gradual spread to France, Italy and other countries of southern Europe.

2nd. It is declared that pellagra is found as an endemic disease only in those countries where maize is grown and extenisvely used as an article of diet by the poorer, rural classes. It is of importance to note on the other hand that the area in which pellagra is found endemic is but as a spot on the extensive area over which maize is found under cultivation. There are vast tracts where maize is, and has been grown and used as food for many years and yet no pellagra has appeared. This matter of much import with regard to the etiological role which spoiled maize is supposed to play.

3rd. It is declared that countries in which maize is not grown or used as food or only exceptionally so used even though contiguous to pellagrous sections or actually surrounded by them, are free of pellagra. There are numerous striking instances of this kind reported in the literature of pellagra (see Lombroso, Procopiu, Babes and Sion, and others).

4th. It is declared that a change of food either among individuals or groups of individuals brings constantly a diminution or disappearance of pellagra, or *vice versa*. There are also many reported instances of this kind. Most writers claim that recovery may take place, or amelioration occur in the condition of pellgrins by removing from their diet all maize and maize products. The case of Corfu in this connection is regarded as such a notable instance that it may bear quoting. Typaldos states that pellagra was unknown on this island prior to 1857 and up to that time the inhabitants grew their own maize, which was of fine quality, but for economic reasons the culture of grapes became almost universal, and they began to subsist on an imported maize of very poor quality, i. e., spoiled maize. Pellagra followed and became endemic, and in 1866 he found 81 cases there.

Now to return to the various modifications of the maize theory; if we disregard some of the finer distinctions, they may perhaps be grouped as follows:

1st. The idea that maize as a food stuff is wanting in proper nutritive value.—This conception is in reality no longer held, having been rather effectually discredited by many careful analyses of maize which show that this cereal possesses highly nutritive vaue, is rich in fats and nitrogenous substances and is easily assimilable. In food value, it compares very favorably with rice for example, which constitutes a staple article of diet among a numerous class of people who do not suffer from pellgra. Pellagra, is, moreover, not infrequently found among well nourished individuals, and its symtomatology is not that of inanition.

2nd. The idea that good sound maize contains certain toxic substance which cause pellagra—This is another view that has been largely discredited by the ab-

sence of pellagra in so many places where maize is and has been for a long period extensively used as food.

It is also worth while to note that the gross distinction between sound and spoiled maize is in the opinion of many able observers not easily determined. Maize by reason of its high fat and nitrogenous contents seems quite subject to change under the influence of bacterial growth, and the grain which may appear perfectly sound can, nevertheless, be shown to be spoiled or damaged to a greater or less extent.

3rd. The toxico-chemical idea that under the influence of parasitic growths (bacteria or moulds) maize may undergo certain changes with the formation of one or more toxic substances of a chemical nature (exogenous poisons). This idea has a host of adherents. It was established through the admirable labors of Lombroso, who has been its great advocate and exponent; and it is perhaps today the most popular of all the various phases of the maize theory. It is not, however, without critics and antagonists, and Lombroso's experimental work and conclusions have been seriously called into question by many able students of the disease.

Lombroso, after devoting more than a quarter of a century to the problem came to the conclusion that certain toxic substances are produced in the maize by the growth of saprophytes on the grain and that the use of such maize induced pellagra. He failed to incriminate directly any microorganism. Investigating chemically the poisons in questions, he described three substances a red oil, a highly toxic substance or pellagrozeina, and a resinous substance. Pellagrozeina he found the most toxic of all of these substances, and in its action upon animals very similar to the toxic principles which are held responsible for the production of ergotism. It is probably not a definite substance, and has been said to contain at least two active principles, one tetanizing (like strychnine), the other narcotic (like conium).

In animals inoculated with these toxic substances, Lombroso noted such symptoms as wasting, muscular spasms, diarrhoea and death; in fowls loss of feathers occurred. He also gave a tincture of spoiled maize to men and observed changes in appetite, some loss of weight, erythemas, desquamation and other skin lesions, with sometimes light diarrhoea.

In the opinion of many, such acute lesions are not comparable to pellagra, and similar conditions may be produced with other harmless cereals submitted to the same process.

A great number of students have accepted Lombroso's ideas in general and followed him in this field, seeking principally to determine the character of the toxic substances produced and the microorganisms responsible for them. Erba, Hausemeann, Pellogio, Gosio and Ferrati Mariana, Belmondo, Pelizzi, Tirelli, Babes and Sion and many others have obtained various toxic substances from spoiled maize, but so far, there is not sufficient evidence to call any of these substances specific in their nature. The evidence submitted seems only to show that from spoiled maize various poisonous substances may be obtained which in animals, and even in man, will produce symptoms or changes which appear some what like pellagra. On the other hand, it is known that extracts from other grains similarly spoiled, may likewise contain similar poisonous properties.

It is of much interest in this connection to know that Babes and Manicatide succeeded in neutralizing the toxicity of spoiled maize extracts with the serum of cured pellagrins and from a series of carefully conducted experiments concluded that the blood of pellagrins contains a substance which possesses the property of counteracting the toxic action of the extracts of spoiled maize.

4th. The toxic-infective idea that from spoiled maize there is formed within the body certain toxic substances. Neusser advocated the view that under some circumstances there is formed in maize, largely under the influence of the *Bacterium maydis*, a certain "receptive mother-substance," which later in the body underwent a further change. Under other circumstances however he viewed the disease as a direct intoxication.

De Giaxa, following an earlier idea of Di Donna's attributed great importance

to the action of the colon bacillus on ingested maize. His idea seems to have been that the vegetating properties of this bacillus may become greatly modified on a culture medium of maize, and he claims to have shown the production by the coon bacillus on maize media of a specific toxic substance.

Marie also seems to favor the conception of an autointoxication. After reviewing with approval Pelizzi's work, he seems to think it reasonable to suppose that the necessary elements in the production of pellagrous symptoms, once in the blood, may decompose there under the action of bacterial ferments ingested with the maize, and undergo toxic transformation. He thinks the toxic substances involved may perhaps be more nearly related to amorphous chemical ferments, and suggests that the pellagrous poison may be polytoxic.

5th. The idea that pellagra is a specific infection derived from maize, whether a mould or bacterium The flora of maize has been frequently studied and a great number of parasites named and described. Most of these, however, have attracted little attention with the exception of the fact that all may cause changes in the grain upon which they vegetate.

Folowing Balardini's *Sporosorium maydis,* which was later discredited, Pari incrimated the maize smut,*Ustilago maydis.* This too was discredited.

In 1881, Majocchi discovered on maize a motile organism which he called *Bacterium maydis.* He claimed also to have found it in the blood of pellagrins. Cuboni later found a similar microorganism in spoiled maize and in the stools of both healthy persons and pellagrins, but in greater profusion in the latter. Paltauf and Heider and others worked with this microorganism, and it was later shown to be the ordinary potatoe bacillus.

In 1896, Carrarioli reported that he had found a bacillus in the blood and stools of pellagrins, which he named *Bacillus pellagrae.* His results have not been confirmed.

In 1902, Ceni declared pellagra to be due to an infection by two moulds, *Aspergillus fumigatus* and *flavescens—a* true aspergillosis.

He claims that the spores of the Aspergelli, ingested with food, escape through the intestine and locate in the lungs, pleurae, pericardium and pia mater, from which places he has been able to isolate them an autopsy. He also states that the greatest toxicity of the aspergilli occurs at that season when pellagrous symptoms are most in evidence, and that this corresponds to the "cycle of the annual biologic evolution" of these hyphomycetes. Later, with Besta, he found these moulds to possess a virulent and characteristic toxine, which resides almost exclusively in the spores, and determined that the media on which they grow play but little part in its production. More recently Ceni and Besta are said to have claimed toxic properties for *Penicillium glaucum.*

Tizzoni in a series of recent papers announces the discovery of a specific microorganism, which he calls *Strepto-baccillus pellagrae.* This work has of course not been confirmed.

In his first paper (1906), he states he isolated from the blood and organs of acute pellagrins (tifo pellagroso and frenosi pellagroso) a bacillus which he found pathogenic for the usual laboratory animals, and which in the guinea pig produced very suggestive clinical pictures and anatomical lesions.

In his next paper, working with Panichi (1907) he experimented with rabbits and guinea-pigs by introducing into the stomach cultures of this same bacillus. From these experiments, he concluded that this bacillus had an elective action upon the intestine of any animal, but in the more susceptible guinea-pig, it produced death with an experimental and anatomical picture similar in all respects to pellagra, provided the diet of the animal contained a liberal share of maize.

In his last paper (1908), he views his previous work, and announces the isolation of the same microorganism from the stools and blood of chronic pellagrins as well as from spoiled maize. He describes two distinct strains of this bacillus, easily differentiated, and thinks these stains correspond to different grades of virulence (acute and chronic pellagra); that the symptoms and anatomical lesions produced in the guinea-pig correspond to those of pellagra; that the elective le-

sion is in the intestine, which is always primarily involved; that this intestinal lesion is always followed by a specific, general intoxication, especially manifested upon the nervous system, blood vessels and red cells, and secondarily upon the liver and kidneys; finally, that these toxins show a long period of latency and have a particular affinity for the nervous system, conducing ultimately to its profound disintegration.

So much for the maize theory and its variations. Now when we turn to the "antizeists", we find them greatly in the minority. There are two great facts which we have urged against the maize theory. First and most significant, is the extensive territory over which maize is and has been cultivated and used as food for many generations and where no pellagra has yet appeared. The second is the frequently reported cases of pellagra in which there is no history of the use of maize or its products as food.

The first statement is of course evident, and the "zeitoxic" idea is offered in explanation. The second is by no means always admitted, and has proven the cause of much controversy. Soon after its creation the "zeist" idea met with much opposition and a group of French thinkers, especially Landouzy and others, reported a number of cases of pellagra where no maize had been consumed. Roussel, the able and ardent French "zeist", sharply questioned their observations and rather effectually discredited their diagnosis, introducing at the same time into the literature of pellagra the now well known term pseudo-pellagra, which he claimed described their cases, as they did not conform to the picture of the true disease. This term pseudo-pellagra has itself been the cause of confusion to some and an object of ridicule to others. Manson speaks of the invention of the comfortable term pseudo pellagra and scornfully remarks: "The disease is pellagra when it fits in with the orthodox theory, and when it can be connected in any way with maize, but when this is not possible, the disease becomes "pseudo-pellagra."

From France, frequent reports have been, and are being made of pellagra without maize, and there has grown up a school of thought there which denies that pellagra is a morbid entity at all. It is spoken of as the pellagrous syndrome and regarded as a *morbus miseriae* (see Cecconi, Le Fers and others). It is undoubtedly true that there may arise among alcoholics and in cachectic states, especially among the insane, certain symptoms simulating in many respects pellagra, yet such a diagnosis is not admissible, and it is said that a careful study of these cases readily permits discriminaion. Certainly, it seems difficult to understand how doubt can arise that pellagra is a disesse *sui generis*, when consideration is given to its unique symtomatology, its anatomical lesions, epidemiology and geographic distribution.

All criticism of the maize school, however, is not of this destructive type. At a meeting of the British Medical Association in 1905, Sambon in a remarkable paper put forward the highly interesting suggestion that pellagra may be due to some protozoan, a suggion which has met with the hearty approval of Manson. The general line of this argument is that an examination of the numerous observations and experimnts show one fact clearly, and that is that each investigator claims to have reproduced pellagra either in man or animals, and yet is evident that the disease can have but one cause. It is unwise, therefore, to place too much reliance upon such experiments, and it should not be forgotten, as history amply shows that the interpretation of experiments is often as fallacious as the interpretation of natural facts. The reputed historical facts with regard to the relation between the introduction of maize culture and the appearance of pellagra, are called into question and an attempt is made to show that there is historical evidence to prove that maize was grown in Europe long before the date usually assigned. It is pointed out that the area of maize is not cultivated, and that the comparative study of the distribution and prevalence of pellagra at different periods is decidedly unfavorable to the maize theory.

The opinion is expressed that the prevailing ideas as to the etiology of pellagra are very unsatisfactory, and that the maize idea has been much too dogmati-

cally adhered to by investigators. The suggestion is made that pellagra shows many analogies with such diseases as syphilis, trypanosomiasis and kala-azar. Such remarkable resemblances are noted between pellagra and trypanosomiasis as the characteristic periva scular small cell infiltration, benefit by treatment with arsenical preparations and the mononuclear increase in the blood. It is further suggested that the parasite may be insect-borne, and the erythema of pellagra may be one of those interesting instances of correlation in nature whereby the parasite is enabled to enter some intermediate host, complete its life cycle and perpetuate its existence, such as is seen in the correlation between the night swarming of the larvae of a certain species of *Filagria* and the nocturnal habits of its in termediate host, a mosquito; and that maize, perhaps, may be found to sustain some such relation to the etiology of pellagra as the swamp has been shown to sustain to the etiology of malaria.

In this connection, it is highly interesting to record that Babes and others in a very recent article have reported highly beneficial effects in the treatment of pellagra with atoxyl arsenious acid combined and they have put forward practically the same suggestive idea as Sambon's. They state that the almost specific therapeutic action of arsenical preparations as well upon certain protozoal diseases as upon the manifestations of pellagra at least suggests by analogy some conclusions as to a similar etiology. Pellagra they still think, is in all likelihood due to some change in maize caused by parasitic influence, and the idea can not yet be excluded that from spoiled maize not only toxic substance but parasites as well may be conveyed to the predisposed human organism, either directly or by means of insects or other organisms.

From its analogy to malaria, piroplasmosis and trypanosomiasis, diseases ha ing to a certain extent the same geogi aph ic distribution, the thought is justified that for the transmission of pellagra some similar intermediate animal host is neces sary; and for the intoxication or infection itself, some microscropic animal para site. Such a parasite must be necessarily very small, perhaps ultramicroscopic, and although in their researches they found in the erythematous skin only of pellagrins bodies resembling the smallest Negri bodies, yet the results of arsenical treatment encourage new investigations along the lines suggested.

The usually given predisposing causes of pellagra contain some facts worthy of brief mention.

With regard to age the statements are somewhat discordant, but it is worthy of note that the disease does not occur in infants, and seems to be rare in children. The usual age seems to be about 20 to 40.

Its relations to the seasons and sun, from the characteristic spring erythema, has furnished some cause for discussion at times and the disease has been called the "sun disease", "sunstroke of the skin" etc. The general opinion, however, seems to attribute to the sun only a mild exciting effect in the production of the erythema.

Alcoholism and other depressing conditions exert only the direct influence of lowering resistance, but it should be noted that the toxic substances of spoiled maize are soluble in alcohol and hence alcohol may contain such poisons.

From a review of the literature one would seem justified, at least tentatively, in making the following statement:

The cause of pellagra is essentially unknown.

That the idea in one form or another, of an etiological relationbetween pellagra and the use of maize as a food, is held by the majority of students of the disease that such an idea is almost as old as the history of the disease itself; and that it rests to some extent upon the observations and xperimental work of many able men; and that at the same time it seems unwise to hold to such views so dogmatically as to exclude investigation along other suggestive lines.

That Ceni's work on the direct infection by certain hyphomycetes (Aspergillus), and Tizzoni's work with his specific *Streptobacillus pellagrae*, while well worthy of serious attention of investigators, remain yet to be confirmed.

That Sambon's suggestion of the possible protozoal nature of the disease rests largely on an argument by anaology and is at present little more than a suggestion.

although an extremely interesting one. That it offers a new and possibly profitable field for research.

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COUNTY SOCIETY REPORTS.

REPORT- OF PELLAGRA MEETING AT ABBEVILLE, S. C., AUGUST, 6TH., 1907.

... C. C. GAMBRILL, M. D., SECT'Y

Dr. G. A. Neuffer of Abbeville called the meeting to order by stating that as the President of the Abbeville County Medical Socciety, Dr. J. B. Britt, was a very bashful young man, and could not preside over such a large gathering, he had been requested to preside at this meeting.

After welcoming the guests to Abbeville with a few well chosen remarks, he then introduced Dr. R. B. Epting, who read a report of six clinical cases, and presented one of his cases. After Dr. Epting's report was concluded, Dr. C. F. Williams of Columbia, State Health Officer was introduced, and read a paper on the "Prevalence of Pellagra" in the United States, "A Statistical and Geographical Note with American Bibliography, by C. H. Lavinder, Passed Assistant Surgeon, U. S. Public Health & Marine Hospital Service; C. F. Williams, M. D., Secretary, South Carolina State Board of Health & State Health Officer; and J. W. Babcock, M. D., Physician and Superintendent, State Hospital for the Insane, Columbia, S. C." This report was listened to with great attention by every one present, and will be forwarded

to the State Journal for publication later. After Dr. Williams' paper was concluded eight clinical cases were presented by Dr. R. B. Epting of Greenwood S. C., Dr. H. E. McConnell, Chester, S. C., Dr. G. A. Neuffer, of Abbeville S. C., Dr. B. H. Carlton, of Donalds, S. C., Dr. C. C. Gambrill of Abbeville, S. C., Dr L. T. Hill of Abbeville, and Dr. J. C. Hill of Abbeville. About one hour was devoted to examining these cases, and they all elicited marked attention from every professional man present.

At the conclusion of the examination Dr. C. H. Lavinder's paper on the etiology of Pellagra was read by Dr. G. A. Neuffer, Dr. Lavinder being prevented from attending this meeting on account of sickness in his family, necessitating his leaving for New York a few hours prior to the meeting. His paper showed a very thorough study of the subject, and the members present derived much benefit therefrom. It will be presented in the South Carolina Medical Journal in the near future. It deserves the closest consideration of every professional man in the South. Those present regretted very much that Dr. Lavinder could not be present with us, but we feel that we got a great deal from the timely paper which he so kindly sent us.

After Dr. Lavinder's paper Dr. Babcock of Columbia, S. C. was introduced, and read a paper on his observation of pellagra in this country and abroad. His paper was much enjoyed by all present and will be printed later in the Journal.

The next heading on the program was the general discussion of the subject. Dr. Neuffer introduced Dr. H. E. McConnell of Chester, S. C. who is reported to have been the first man in America to diagnose this disease. Unfortunately for him, he did not publish his case and now there are others claiming priority over him.

Dr. McConnell said:—I have nothing new to add to the subject than stated last year at the Conference held in Columbia in November. As stated there I diagnosed the case in 1903, but the patient died. The next case was seen in 1906 and 1907; the patient suffering with sore mouth, which I could not cure, later the eruption and the gastro-intestinal symptoms appearing, and then I was positive that I had pellagra to deal with. This patient died the day I attended the conference in Columbia.

Dr McConnell then gave us the history of a patient he had treated with all the symptoms of pellagra, in which, in addition to the routine treatment, he had used the Leucrodescent light rays, which seemed to benefit the eruption very much and cured the patient temporarily, but the patient returned from time to time for the treatment, as the eruption seemed to reappear. At the request of Dr. Babcock, Dr. McConnell recited the history of old Mr. Smith, who is 93 years old, and who has had repeated attacks of pellagra, but is still living. Dr. McConnell was asked by Dr. Wideman of Due West S. C. if this man had eaten corn bread all of his life, and the reply was yes, but that he had never drunk any corn liquor. (Applause.)

Dr. McConnell was asked what percentage of his cases were women and his reply was that 75 per cent were females and 25 per cent males. That his female patients had everyone died, but his male patients were still living and that men seem to stand pellagra much better than women. He was then asked if he thought the difference in the present day milling of corn had anything to do with the condition. His reply was that nearly everybody bought bolted meal nowadays, and it was his belief that everyone used damaged maize products, which the prevalence of this disease throughout the country might be attributed to. At this junction of the discussion Dr. Furman asked if any of the patients had suffered with constipation instead of diarrhoea. Dr. Babcock stated that this would be included in his paper.

Dr Isaac Taylor of Morganton, N. C. being called on by the president stated that he came to Abbeville to listen rather than to speak, and that all the cases which he had dealings with were advanced asylum cases of pellagra, and they had passed away. He recalled to mind one case that had been sent to the Asylum suffering with Alcoholic-Morphine-Erythema. This case was confined to the asylum about two weeks and improv-

ed under treatment, but after dismissal developed a typical pellagra rash and died. His next case was one of a mental hysteria from South Carolina who after a few months treatment, passed out of his hands to a physician in Atlanta Ga. and he had it from this physician that she died from pellgra. Dr. Taylor stated in closing that he wanted to thank Abbeville County Society for the interest they had manifested in arranging this meeting, and for the pleasure this meeting had given himself and others in having the opportunity of listening to such a wide and interesting discussion on the subject.

Dr. Mayer of Newberry, S C. stated that he had had only one case, in fact, had nothing to say on the subject, but as he was Counsellor of the District in which Abbeville was located, he was proud of his district for having displayed such an interest in the subject, and arranging for such a meeting and he was quite sure that it would not only result in good for the members of the profession of Abbeville county, but for the members at large in the profession in the state and out of the state. He further stated that he hoped the secretary of the Abbeville County Medical Society would send a full report of the meetng to the Journal for publication so that those who were not able to attend the meeting would reap the benefit therefrom.

Dr. Wideman of Due West, S. C. stated that he did not think that we ought to attribute the cause of pellagra entirely to eating corn bread. That he knew of several negro women who had eaten corn bread all their lives and had not developed pellagra; and it is a fact that the negroes are having it now who for several years have not eaten corn bread, but who must have their first patent flour,—and the same thing may be said of the whites. He did not agree that the corn bread theory had anything to do with pellagra, and that he had been skeptical as to the existence of such a disease until about three weeks ago, when he had a case to occur in his practice. This patient had never been a corn bread eater, but one of the flour bread kind. He admitted that he was a recent convert, and hoped that he would not be a "back-slider," but that he could not swallow all of this corn bread theory that they were trying to give him. (Laughter and Appause.)

Dr. G. Pressley Neel of Greenwood, S. C. said that he had nothing new to add to the treatment of pellagra, but recently he had been trying the berry treatment. He made it a rule to have the patient abstain from corn bread, and use a generous meat diet and fruits. He advised all of his patients to eat all the dewberres, huckleberries, strawberries, cherries and fruits in season and some of them did well on his diet.

Dr. John Lyon of Ninety-Six, S. C. stated that he wanted to call attention to the fact that with one of his patients whom he had to abstain from corn bread had gotten a great deal better, and then on going back to the use of corn bread, had very soon had a relapse. He was then asked, how soon after, did the relapse occur? He stated, the very next day.

Dr. T. L. W. Bailey of Clinton, S. C. here stated an instance of a patient of his who seemed to have an abnormal appetite for corn bread, and that it was all he could do to prevent her from eating it; but so far he had been able to restrain her, but he was afraid he could not do so much longer, but if she ate the corn bread, he hoped to have a report on her case at the meeting this fall.

Dr. Babcock then stated that Dr Wideman had brought out two of the most important points in the whole matter. The first one was skepticism. He did not believe that we would make any progress in this pellagra study unless we had fighting skeptics in our ranks. He further stated that Dr. McConnell in speaking of pellagra in 1903, did not announce to the world what he wanted to because some of his brother physicians were skeptics.

The second point which Dr. Wideman brought out, Dr. Babcock considered the most important:—That of the corn bread diet.

Dr. Babcock closed the discussion with comments on what others had said. He emphasized the point that diagnosis of pellagra must be made regardless of skin lesion. As to ages the first two pellag-

grins he saw in Italy were a mother and two year old child, both afflicted. Both had been fed on polenta a dish similar to mush. Italian authorties mantain that pellagra is not communicable. He discussed technically the difference between the symtomatology of sprew and pellagra.

Those present were the following.

E. W. Pinson, M D. Cross Hill, S. C.
J. M. Carlton, M D. Mt. Carmel, S. C.
A. W Busch, M. D. Lincolnton, N. C.
B. W. Carlton, M.D. Donalds, S. C.
J. Lee Young, M. D. Clinton, S. C.
J. W. Davis, M D. Clinton, S. C.
C. D. East, M. D Goldville, S. C.
S. G. Miller, M. D. Chester, S. C.
Jno. H. Miller, M. D. Cross Hill, S. C.
T. L. W. Bailey, M. D. Clinton, S. C.
Theo. J. Peake, M. D. Cross Hill, S. C.
C. F. Williams, M. D. Coumbia, S. C.
J. W. Widemen, M. D. Due West, S. C.
C. C. Gambrill, M. D. Abbeville, S. C.
John W. Wickliffe, M. D West Union, S. C.
L. O. McCalla, M. D. Lacenton, Ga.
J. B. Britt, M. D. Troy, S. C.
H. E. McConnell, M. D. Chester, S. C.
P. K. Black, M. D. Mt Carmel, S. C
J. E. Edwards M. D. Spartanburg S. C
J. D. Wilson, M. D. Lowndesville, S. C.
Isaac M. [illegible] Morganton, N. C.
G. Pressley Neel, M. D. Greenwood, S. C.
E. W. Carpenter, M. D. Greenville, S. C.
J. R. Bell, M. D. Due West, S. C.
J. A. Anderson, M. D. Antreville, S. C.
E. A. Hines, M. D. Seneca, S. C.
O. B. Mayer, M. D. Newberry, S. C.
W. T. Jones, M. D. Ware Shoals, S. C.
F. E. Harrison, M. D. Abbeville, S. C.
Y. M. Hitch, M. D. Hodges, S. C.
E. B. Hendrix, M. D. Greenville, S. C.
E. C. Doyle, M. D .Seneca, S. C.
W. Townes Jones, M. D. Ware Shoals S. C.
G. A. Neuffer, M. D. Abbeville. S. C.
J B Townsend, M D Anderson, S C.
W. R. Doyle, M. D. Seneca, S. C
B. W. Cobb, M. D. Greenwood, S C.
J. W. Babcock, M. D. Columbia S. C.
Davis Furman, M. D. Greenville, S. C.
John Lyon, M. D. Ninety-Six, S. C.
L. T. Hill, M. D. Abbeville, S. C.
W. E. Link, M. D. Willington, S C.
W. D. Simpson, M. D. Abbeville, S. C.
R. B. Epting, M. D. Greenwood S. C.
W. T. Lander, M. D. Greenwood, S C.
Jno. K. Cevil, M. D. Columbia, S. C.
W. P. Turner, M. D. Coronaca, S. C.
W. O. Holloway, M. D. Chappells, S. C.
W. L. Keller, M. D. Abbeville, S. C.
J. C. Hill, M. D. Abbeville, S. C.
W. M. Cheatham, M. D. Abbeville, S. C.
Dr. J. R. Nickles, Abbeville, S. C.
Dr. G. E. Calvert, Abbeville, S. C.
Dr. A. L. Harvin, Abbeville, S. C.
Miss Clara Hamilton Carter—Reporter, McClures Magazine.

CHEROKEE.

J. G. Pittman, M. D., Secretary.

The Cherokee County Medical Society met with the largest attendance since reorganization and it was apparent that each member present felt the desire to make our County organization a strong and effective one.

Resolutions expressing regret at the departure from our midst of one of our oldest members, Dr. C. M. Littlejohn, and hopes for his success in his new field were unanimously approved.

The request of Dr. Gunter, a dentist for membership in our society, was brought before the society and discussed favorably by all. The opinion prevailed that the society would be glad to have all the dentists attend our meetings, but we were in doubt as to our ability to make full members of them under the laws laid down by the State organization The motion was made and unanimously carried, that the dentists be cordially invited to attend our meetings, and that the secretary take up with the State organization the question of including dentists in membership of our County Society. It would be well for all societies if the question were taken up and discussed authoritatively by the editor of the State Medical Journal, as other County Societies are doubless faced by the same question.

Next, the question of our national plague, tuberculosis, was broached and the part our County organization should take in combating spread of this fell disease. Motion was made and carried that the Presiddent appoint a committee of three to recommend a course of action for the Society to take against tuberculosis and its spread and to report at the next meeting of the Society. The President appointed to this committee Drs. Darwin, Caldwell, and Brown.

The Society then turned to reading of papers and were entertained by Drs. Sherrard and Steedly. Dr. Sherrard said that in lieu of a paper by himself he wished to call attention to a most able article delivered as an address on medical ethics. He read from this article portions that were of most interest to the practicing physician and the time so spent was of profit as well as interest to all who heard it. Dr. B. B. Steedly then read a paper on Methods of Tying Surgical Knots and demonstrated the value—as a time saver in operating—of a rapid and easy method of tieing the surgical or reef knot. As he says in his paper, the description appears formidable, as any such minute descrption must, but his demonstration showed that when the description is mastered the feat is simple and effective as a time saver. He offers in his paper some improvements on the old methods described in the text-book, which he has worked out himself and which very materially facilitate the tying of ligatures and sutures.

The meeting was then adjourned to the first Friday in August.

FLORENCE.

E. M. Allen, M. D.,
Secretary, pro tem.

The Society was called to order at the usual time and place, the President in the chair.

As only the physicians of the city were present the papers for reading were postponed, the regular order of busness set aside, the meeting was opened to the general discussion of the hygiene and sanitation of Florence.

There were especally strong pleas made for the strict observance of the sanitary laws around each individual's premises in order that the town in common might enjoy its benefits.

Dr. McLeod of the sewerage committee for the city explained in detail the working of the new sewerage system that Florence is about to begin to put in. He explained in particular the method of the modern septic tank and filters to be installed, showed the advantage of this system over the old methods of using our rivers, which necessarily made cess-pools of our water-ways.

Dr. McMaster, who has just returned from Antietam, where he has been studying army sanitation etc., gave an interesting talk on sanitary methods employed by the United States Army especially adapted to camp life.

The Society adjourned to meet the first Monday in October, when a paper on Tuberculosis will be read by Dr. A. G. Eaddy, of Timmonsville.

MEDICAL SOCIETY OF SOUTH CAROLINA.

A. J. Jervey, M. D. Secretary.

COLLEGE CHANGES.

Should a Graduate of the Medical College of South Carolina, as recent even as 1908 visit his Alma mater, he would ask of himself what new and strange place is this? To those of us who love the old these changes at first seem a sacrilege, for there is a certain awe-inspiring sanctity and reverence in treading the very corridors and halls trod by Sims, Dickson, Geddings, Thomas, Porcher, and a host of others who have long since attained the Golden Fleece of their ambition and been gathered to their last reward; but these sentimentalities must be laid aside and the spirit of the times must creep in and take its place. The growth and expansion of the last decade has been unprecedented. To meet this the teaching staff and facilities have from time to time been increased, months added to the term, and years added to the course. However more than this was needed. The seating capacity of the building as it stood was entirely inadequate and to

meet this deficit the present changes were undertaken. The old Amphitheater has been replaced by a large well-lighted and ventilated Assembly Hall calculated to seat three hundred students.

The seats are arranged on a very gentle incline. The dead space between the old Amphitheater and the north wall of building has been taken into the Assembly Hall and here is a commodious platform for the lecturer to stand on. Over the Assembly Hall has been built two large lecture halls. One to be the Physiological Laboratory, where Dr. Pollitzer, who is now North perfecting himself in this line of work will conduct experiments on animals. This will prove a most important aid to the chair of Physiology. The Anatomy Lecture room has been enlarged and is now adjoining the Specimen room (formerly the Museum.) The dissecting room has been added to and a vat has been installed so that subjects may be on hand at all tmes. The passage of a law last year turning over pauper bodies to the Medical Colleges insures an abundant supply. The Executve Office in the Southeast corner of the first floor opens on the entrance hall. All of these improvements together with the new laboratory built last year completes a metamorphosis that has been going on some time and makes the Old College as modern an Institution as can be found.

This year outside lecturers have been arranged for, among them, Dr C. W. Stiles of the Bureau of Animal Industries, Washington, will deliver a course of lectures on Malaria and the Hookworm disease. These will probably be delivered sometime in November. Dr. Babcock of Columbia, it is hoped and expected will give a series of lectures on Pellagra. Many of the old Alumni will doubtless arrange to be in Charleston at these times.

The very creditable paper on Caesarean Section in eclampsia, however impracticable its suggestions may seem to those of us remote from hospitals, appears elsewhere or will do so later. The paper was generally discussed and the concensus of opinion was that the time was not yet ripe for such drastic measures. As the writer says, "in choosing between Caeserean Section and High Forceps we must not think solely of the question of maternal morality but also of invalid mothers and idiot children who are living monuments to a faulty judgment.

ORANGEBURG

D. D. Salley, M. D. Secreary.

Orangeburg County Society met in Orangeburg. Tuesday July 20th, nine members present.

Am pleased to report three new members added to our roll and indications of renewed interest in the society, which I trust will be fully realized.

We had several interesting clinical cases reported, among them, one by Dr. T. H. Dreher, of what seemed to be a case of acute indigestion, complicated with cerebral hemorrhage and probably uraemia. Clinical picture as follows:— A healthy man of about fifty years, a few hours after eating heartily of fish etc., at a fish fry, was taken with convulsions, mind being perfectly clear between seizures. Belly tight, and bowels constipated, it being necessary to give croton oil, other herioc doses of calomel etc. failing to move bowels.

After bowels moved, convulsions ceased, but there was both motor and sensory paralysis of one side, with uræmic symptoms. Pulse and temperature elevated, but pulse gradually slowed, death supervening on sixth day.

About six weeks before this attack, patient had a similar one after eating heartily at a fish fry, but recovered in a few days, being perfectly well until his last fatal attack.

Treatment and differential diagnosis of cerebral hemorrhage and cerebral embolism were then taken up and fully discussed.

The Secretary read a paper, entitled, "The Secretary and the Society," which will be published in the Secretaries' Department of the Journal, at a later date.

Society then adjourned to meet at Elloree, in August.

SPARTANBURG

L. Rosa H. Gantt, Secretary.

The Spartanburg County Medical Society held its regular monthly meeting July 30th, with the attendance still below the average, though better than at the June meeting, there were also several visitors.

No papers had been prepared for this meeting, but a patient with pellagra was exhibited and a general discussion of the disease entered upon, the physician who presented this case stating that he had not been able to find anything which would relieve the uncomfortable giddiness which was a well marked symptom in this particular case, and asked for suggestions.

A count was taken of the number of cases of pellagra at present under treatment by the physicians present at the meeting and the fifteen members present reported sixteen cases, one physician having eight of these.

DEPARTMENT

Of the Society of Medical Secretaries, South Carolina Medical Association.

DR. ALLEN J. JERVEY, Charleston, Chairman.
DR. MARY R. BAKER, Columbia, Vice-Chairman.
DR. L. ROSA H. GANTT, Spartanburg, Secretary and Treasurer.

TO THE SECRETARIES NOT YET MEMBERS.

L. Rosa H. Gantt, M D., Secretary South Carolina Society of Medicoal Secretaries, Spartanburg, S. C.

Where are the seventeen Secretaries and three Councillors who have not yet become members of the Society of Secretaries and sent in their assessment? The secretary doesn't seem to be able to find them as letters do not bring them to light. It is hoped, however, that the June issue of the Journal has made them realize that this society—though only a subordinate body of the State Association—is certainly not of minor importance for it is the County Society that makes the State Association and, in most instances, it is the active, interested secretary that makes the County Society.

There seems to be an idea among some of the secretaries who were not at the organization meeting that they must first bring the matter up and get the consent of their respective County Societies before they can join; this idea is decidedly incorrect for those secretaries who organized had no instructions, they went ahead, joined, and paid the assessment, hoping that their County Societies would refund the amount, and, I believe, in most instances they did.

The secretary has received programs from but six secretaries. The program exchange among the secretaries is not as active as it might be though the value of this exchange has already evidenced itself in the very attractive folder programs gotten out by the secretaries of Oconee, Abbeville and Pickens Counties, which is the direct result of this exchange.

Few, if any of us, have an over-abundant amount of originality and we must copy from others, so if you see a good program copy it, if you have a good one send it on so that the other fellow may copy it. Let's do away with the postal card form of programs. We don't use cards for our business correspondence, let's not use them for the County Medical Society's.

Won't the secretaries of Marion and Cherokee counties please send their names to the editor so that they may be

put in the table of county officers in the Journal? There is a name in the secretary's column for Cherokee, but letters sent to him have been returned by the postmaster, and as there is no name in the president's column for the county, I have been unable to get in correspondence with this Society.

This table in the Journal is the only guide that we have and it is very important that it be a complete and correct one. If every secretary will look over the table and make the corrections necessary we can have such a one in the next issue.

THE COUNTY SECRETARY'S RESPONSIBILITY.

By Theo. A. Quattlebaum, M. D., Secretary Aiken County Society.

To The Secretaries and Members of the County Societies:

Boasting is immodest and self praise is half scandal. The writer does not propose to speak of himself but of the class of which he is one. If there be any reflected encomium by reason of his connection with the thing lauded, his readers will not begrudge him that. The writer believes that any man or woman who has been made secretary of his or her society solely by reason of fitness and fidelity has been honored. His position is one of responsibility and trust.

To a large extent the success or failure of the society has been committed to his keeping. I do not mean that he is the whole shooting match. He should never imagine that he is IT. But he should feel that he is a large factor in making the society a strong and united force. Common honesty should prevent a man from accepting the honor of a position without rendering the service that attaches thereto. No one should accept an office who does not propose to fill that office to the best of his ability. A good secretary is more to be desired than a good president. A poor president is a misfortune, a bad secretary is a calamity.

A secretary should be elected because he can do good work and not that he may be given an office. The position of secretary is one of considerable work and of no play. He is expected to be a man of all work from that of janitor and fire builder, up. He is required to do scads of writing which this scribe hates worse that the Devil is alleged to hate holy-water. Now while a proficient secretary is a wheel-horse in his society the best one of the world cannot make the society a success without the co-operation of the other members. He has no power to compel members to attend meetings or to do anything they are unwilling to do.

What I want to say is that it is imperative that the individual members be willing to do their full duty as component parts of the society. They should be regular and punctual in attendance upon meetings, cheerfully doing the things required of them. They should feel that they ought to do their part in making the meetings attractive and profitable. A prompt response to calls for service would make so much smoother sailing for all concerned. If every man would only do his duty, what a difference there would be.

In conclusion, fellow secretaries we are bon tons of the professon so let us conduct ourselves accordingly. My fellow members of the societies, you are our peers, therefore you cannot be less faithful than we.

Members of the Society of Secretaries.

I. R. Wagner, Cheserfield County.
J. I. Barron, York County.
E. T. Kelly, Williamsburg County.
A. J. Jervey, Charleston County.
D. D. Salley, Orangeburg County.
C. C. Gambrill, Abbeville County.
W. J. Burdell, Kershaw County.
T. A. Quattlebaum, Aiken County.
Mary R. Baker, Richland County.
W. B. Cox, Chester County.
C. R. May, Marlboro County.
E. H. Hines, Oconee County.
E. W. Simons, Dorchester County.
L. Rosa H. Gantt, Spartanburg Co.
T. G. Kershaw, Colleton County.
C. B. Geiger, Clarendon County.
J. La Bruce Ward, Georgetown Co.
E. R. Wilson, Sumter County.
Jesse H. Teague, Laurens County.
J. R. Young, Anderson County.
J. C. Lawson, Darlington County.

J. D. Waters, Saluda County.
J. J. Wingard, Lexington County.
E. W. Carpenter, Secretary 4th District
F. M. Dwight, Councillor—7th District.
O. B. Mayer, Councillor—3rd District.
J. F. Williams, Councillor—4th District.
W. P. Timmerman, Councillor—2nd District.

PERSONALS.

Dr. A. B. Knowlton, Surgeon to Knowlton Hospital, Columbia, is at Mayo's Clinic for three weeks.

Dr. J. H. Taylor, of Columbia is spend ing the summer in Europe.

Dr. B. B. Steedley, of Gaffney, S. C. has moved to Spartanburg, and will open an Infirmary for Gynaccological cases.

Dr. Robert L. Edwards, of Darlington, S. C. has moved to Richmond, Va., and will open an Infirmary for Eye, Ear, Nose, and Throat cases, limiting his practice to this specialty.

Dr. W. W. Fennell, of Rock Hill, S. C. has opened the new Fennell Infirmary, much larger than the old one.

Dr. T. P. Whaley, of Charleston, S. C. who has been ill is convalescent and is now in the North.

Dr. Geo. Heintish, who was painfully injured in a runaway automobile, is convalescent.

The child of Dr. Walter Cheyne, of Sumter, S. C. who has been seriously ill, is improving.

HYMEN IN THE RANKS.

Dr. W. W. Boyd of Laurens and Miss Carrie Felder of Bamberg were married at the home of the brides parents on the 16th. Mrs. Boyd is a recent graduate nurse of Roper Hospital school Charleston, so is claimed to some extent by the profession. She is a charming young lady, the reports say, and the doctors of the state know how worthy and atttractive a young man Dr. Boyd is. He is a member of the Laurens county association.

OBITUARIES.

Dr. J. M. Carlton.

Dr. J. M. Carlton, of Mt. Carmel died at his home in that town on the 15th, having been taken suddenly ill that morning. Doctors Charles Carlton and Neuffer were both summoned and did all that could be done but in vain. No particulars of his malady have been given. He was 45 years old and one of the most prominent and highly respected physicians in Abbeville County.

Dr. L. C. Stevens, a Veteran.

Dr. L. C. Stevens, for 51 years a practitioner in this state, and a war surgeon of Hart's Battery died in Greenville on the 12th after a trip to Ceasars Head the day before, in which he probably over exerted himself. He had once been President of the State Medical Association. He had moved to Greenville nine years ago from Barnwell.

Dr. Ralph B. Hanahan.

Dr. Ralph. B. Hanahan, a beloved physician of Winnsboro died on the night of July 30. He was buried from the Episcopal Chapel with Masnic honors and a large concourse of people in attendance to testify the regard in which he was held in the community where he had lived so great a part of his life. He was the son of a well known physician of the old times of Edisto Island and was educated at the famous Old Mt. Zion Academy. For his heroic services after the Charleston earhquake he was presented with a medal by the city. He leaves a wife, daughter of Dr. Bratton of Yorkville, and four children.

JOURNAL OF THE SOUTH CAROLINA MEDICAL ASSOCIATION.

FLORENCE, S. C.

PUBLICATION COMMITTEE

Dr. O. B. Mayer, Newberry, S. C., Chairman.

Dr. F. M. Dwight, Wedgefield, S. C.

Dr. J. T. Taylor, Adams Run, S. C.

Dr. F. H. McLeod, Florence, S. C. Editor.

BIERS HYPERAEMIC TREATMENT OF INFLAMMATION.

Prof. Bier has maintained "that an inflammation—from the physiologic point of view—does not, in itself, represent a diseased condition, but is a phenomenon indicating the body's attempt to resist a deleterious invasion" and "to increase this beneficent inflammatory hyperæmia resulting from the fight of the living body against invasion, is the aim of Bier's Hyperaemic Treatment."

The idea was given Bier that those cases of heart disease in which the pulmonary circulation was increased, never had a tubercular process in the lungs; while those cases with poor lung circulation were predisposed to tuberculosis.

He conceived the idea that nature did her healing by throwing an increased amount of blood to an involved area.

He teaches that we should "artificially increase redness, swelling and heat"—the conditions we have heretofore regarded as necessary to treat—claiming them as nature's method of cure.

Many theories have been advanced as to how the increased amount of blood benefits Bier thinks it an oversaturation of the tissues with serum.

Dr. Willy Meyer in "Bier's Hyperaemic Treatment," enumerates the advantages of the method as follows:

1. Suppression of inflammation.

2. Avoidance of suppuration in many cases.

3. The possibility of using small, instead of large, incision, in cases where suppuration has already set in.

4. Hastening the course of the pathologic process.

5. Favors absorbtion.

6. Diminution of pain.

7. Wide field of usefulness—acute or chronic inflammatory cases, etc.

There are various methods of inducing the desired hyperaemia, but we shall only refer to one—the constricting rubber band. This method is applicable to the diseases of the head, scrotum and extremities.

A soft rubber band, two or three inches wide, is wound around the limb, above the inflammation, six or eight times, distributing the pressure of the bandage by overlapping its edges, applied tight enough to slightly contrict the return flow of blood—the veins, but not the arteries—and not tight enough to cause pain.

Very soon the veins, below the bandage, will become distended, and the skin take on gradually a bright red color, or bluish red. If the limb is not warm, a bath of hot water will facilitate the rapid induction of the hyperaemia.

One is apt to apply the bandage too tight, but the patient is your guide—he

knows if it is too tight and will complain.

The length of time the bandage should be left on varies from a few hours, several times daily, to as many as twenty or more hours daily. When the parts become too cyanotic, the bandage must be loosened.

This form of treatment is applicable to wounds, abscesses, tubercular joints, gonorrhael arthritis, orchitis, felons etc.

Experiments have been made as to the bacterialcidal power of hyperasmia.

Dr. Everett O. Jones, in Northwest Medicine, states that Notzel inoculated 67 rabbits with fatal doses of anthrx bacilli, and subjected the inoculated portions of the body to hyperaemia. Fifty-one showed no effect of the inoculation.

To prove that this was due solely to hyperaemia, the same animals were inoculated a few weeks later, without hyperaemia, and all succumbed. The same experiments with stphylococci and streptococci gave similar results.

The results of this method of treatment prove conclusively its value and it is hoped that its use will be more generally employed.

LIFE INSURANCE AND PREVENTIVE MEDICINE.

Three events of signal importance to the medical profession have been recently chronicled in the daily press. At the Convention of the Presidents of Life Insurance Companies, held a few months ago, it was generally agreed that the time had come when these companies could no longer regard with indifference the problems connected with public health and the campaign, hitherto fought solely by the medical profession, for diminishing disease and increasing longevity. As a proposition of sound economic importance, this propaganda appealed with incisive logic to the business instincts of the heads of financial institutions. The postponement of the age of death would increase the income of these companies in two ways: first, by diminishing the number of death claims paid, and second, through the general reduction in the rate of premiums, by increasing the number of those individuals who were willing or able to purchase life insurance. The benefits to the company and to the insured would obviously be mutual.

This discussion has already borne fruit. One of the largest companies has proposed to build a sanitorium for the treatment of tuberculosis among its extensive force of office and field employees, and among those of its policy-holders who care to avail themselves of this opportunity of getting cured or of having the disease arrested. Another powerful company has inaugurated a campaign of education among its policy-holders, through the disemination of literature dealing with personal hygiene and preventive medicine. Moreover it proposes, at no cost to the applicant to furnish the policy-holder, whenever he may desire it, a complete physical examination, and whatever advice he may need to enable him to prevent of overcome any threatening or existing defect or disease. The former plan, involving the expenditure of funds for building and equipping sanatoria, has not been sanctioned by the Superintendent of Insurance of New York State, who has ruled that the present insurance laws do not permit such an investment of the funds of insurance companies. New legislation will doubtless, however, remove the technical restriction.

To the system of the education of policy-holders in the ways of right living there can be no legal objection. In view of the large number of individuals whose lives are insured, the inauguration of such a campaign of education by all companies would not fail to be of decided influence in improving the conditions of health not only among the large force of policy-holders, but also among the larger army of those who are closely related to them. The detection of incipient disease would necessarily suggest the proper hygienic and remedial meas-

ures. This effort toward diminishing the prevalence of disease and reducing mortality finds its perfect anology in the measures taken by fire insurance companies in safeguarding property from fire, by means of a rigid inspection of buildings, and by the framing of rules regulating the proper form of fireproof construction, the storage of explosives, etc.

The influence of life insurance companies in uplifting the general health and mode of living has existed as a silent force from the very beginning of the inauguration of this institution. Countless have been those individuals who first learned of some existing defect, disease, or pathological tendency through the examination made when they applied for life insurance. How incalculable therefore must have been the efforts made to eradicate these defects and check these tendencies, which the applicants were impelled to make in order to qualify for a subsequent examination. The arresting of injurious habits of excessive indulgence in alcohol or tobacco, the avoidance of overwok, particularly the relaxing of the severe tension of business activities during and shortly after middle life, are familiar examples of some of the wholesome influences that life insurance examinations have created.

The era of preventive medicine has barely dawned. Statesmen are beginning to open their eyes to the vast importance of conserving the health of the nation in order to insure its civic integrity and permanence. The industrial world is not only no longer unwillingly yielding to wise laws designed to safeguard the health of the laboring classes, but is actually initiating, of its own volition, measures for improving the physical welfare, and therefore indirectly the industrial efficiency of the workers. The educational authorities are beginning to focus their attention upon the bodily health of the child, for without this, all efforts at mental training are worse than useless. The insurance interests, which have become an integral and indispensible part in the modern machinery of society, are merely falling in line with this universal tendency.—Editorial from the Medical Record.

Hydrogen peroxide should not be injected into deep infections in loose areolar tissue, as the expanding gas pushes the infection into the uninfected areas. Its most useful field is in open places.—W.—American Journal of Surgery.

In immoblizing the knee-joint the patient is more comfortable and better relaxation is secured if a very slight degree of flexin is maintained.—American Journal of Surgery.

To differentiate a tender spot from a simulated pain, it will be observed that pressure on the former causes a decided increase of pulse rate, while in simulation it does not.—W.—American Journal of Surgery.

Cotton will hold more securely on an applicator if the tip of the latter is dipped in colodion before winding it. The employment of this advice will afford a sense of security when applications are made in urethra, bladder or deep sinuses.—American Journal of Surgery.

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District No. 2: Orangeburg, Bamberg, Lexington and Calhoun. Councilor, Dr. W. P. Timmerman, 1910.

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TABLE OF COUNTY SOCIETIES AND OFFICERS.

Where information is wrong or lacking in the columns below County Secretaries are urged to supply it correctly to the editor without delay:

County Society	President	Secretary	Time of Meeting
Abbeville	J. B. Britt	C. C. Gambrell, Abbeville	
Anderson	J. L. Gray	J. R. Young, Anderson	Semi-Mo., 1st and 3rd Monday
Aiken	C. A. Teague	T. A. Quattlebaum, Gr't'ville.	Monthly, 1st Monday
Bamberg		J. J. Cleckley, Bamberg	
Barnwell	A. B. Patterson	L. F. Bonner, Blackville	
Beaufort	H. M. Stuart	M. B.Cope, Port Royal	
Charleston	John L. Dawson	A. J. Jervey, Charleston	Semi-Mo 1st and 15th
Cherokee		B. L. Anken, Gaffney	
Chester	J. G. Johnston	W. B. Cox, Chester	Monthly, 1st Monday.
Clarendon	W. M. Brockinton	C. B. Geiger, Manning	Quarterly
Chesterfield	T. E. Lucas	J. W. McCanless, Chesterfield.	
Colleton	J. T. Taylor	T. G. Kershaw, Walterboro	Monthly.
Darlington	J. F. Watson	J. C. Lawson, Darlington	
Dorchester	J. B. Johnston	E. W. Simons, Summerville.	Monthly, 1st Monday.
Edgefield		J. G. Edwards, Edgefield	
Fairfield	R. B. Hanahan	Samuel L'ndsay, Winnsboro.	Quarterly
Florence	F. H. McLeod	J. H. Peele, Cartersville	
Georgetown	Olin Sawyer	W. M. Gaillard, Georgetown.	Monthly, 1st Friday.
Greenville	L. L. Richardson.	W. M. Burnett, Greenville	Monthly, 1st Monday
Greenwood	R. B. Epting	J. B. Hughey, Greenwood	Monthly, 1st
Hampton	T. B. Whatley	C. A. Rush, Hampton	Monthly, 3rd Wednesday
Horry	A. D. Lewis	J. S. Dusenbury, Conway	Monthly, 2nd Monday
Kershaw	S. C. Zemp	W. J. Burdell, Lugoff	
Laurens	W. D. Ferguson	J. H. Teague, Laurens	Monthly, 4th Monday.
Lee	B. L. Harris	R.O.McCutcheon, Bishopville.	Monthly, 1st Tuesday.
Lexington	W. L. Kneece	J. J. Wingard, Lexington	Quarterly.
Marion	B. M. Badger		
Marlboro	W. M. Reedy	Chas. R. May, Bennettsville.	
Newberry	J. M. Kibler	J. J. Dominick, Prosperity	
Oconee	J. W. Wickliffe	E. A. Hines, Seneca	
Orangeburg	W. L. Pou	D. D. Salley, Orangeburg	Monthly, 3rd Tuesday.
Pickens	J. L. Bolt	R. J. Gilliland, Easley	Monthly, 1st Wednesday.
Richland	L. A. Griffith	Mary R. Baker, Columbia	Every 2nd Monday night.
Saluda	D. B. Frontis	J. D. Waters, Coleman	
Spartanburg	S. T. D Lancaster	L. Rosa H. Gantt, Sp't'nb'g.	Monthly, last Friday.
Sumter	Archie China	E. R. Wilson, Sumter	Monthly, 1st Thursday.
Union	J. T. Jeter	R. R. Berry, Union	Weekly
Williamsburg.	W. H. Woods	J. B. DuRant, Lake City	Monthly.
York	M. J. Walker	John I. Barron, Yorkville	Bi-Monthly

A young and apparently healthy man with tendosynovitis should always be suspected of gonorrhea.—American Jour nal of Surgery.

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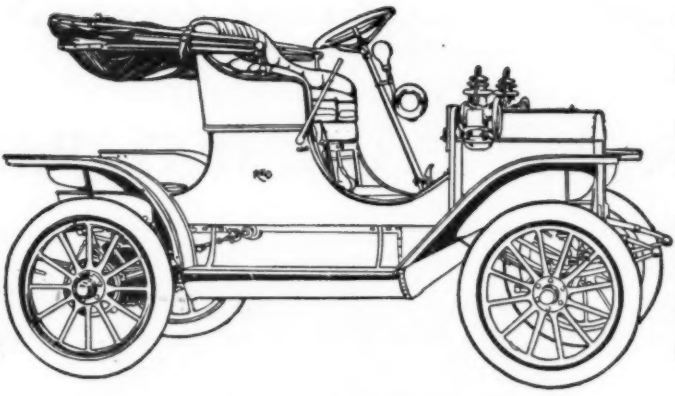

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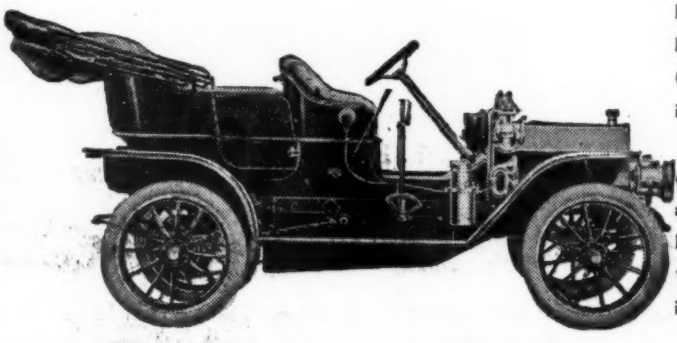

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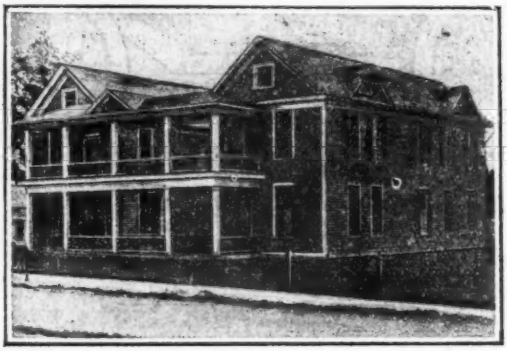

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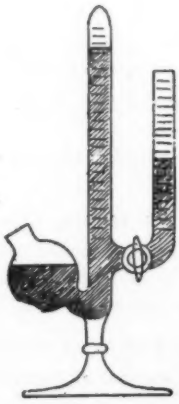

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